



**The socio-economic gradient in health: a never ending story?**  
**A descriptive and explorative study in Belgium**

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for the degree of Doctor in Medical Sciences



Aan mijn ouders  
Aan Geert en Helena

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## List of abbreviations

BASCD British Association for the Study of Community Dentistry

CI confidence interval

C&F Child and Family (Kind & Gezin)

dmf-s summation of decayed, missing and filled tooth surfaces

ECC early childhood caries

FGD focus group discussion

GLOBE-study Dutch acronym for the study on "health and living conditions of the population in Eindhoven

and surroundings"

GP general practitioner

NS not significant

OECD Organisation for Economic Cooperation and Development

OR odds ratio

pr partial correlation

r the product-moment correlation

RH relative hazard

SARS Severe Acute Respiratory Syndrome

SE standard error

SEM standard error of the mean

SES socio-economic status

SHD school health department (Centrum voor Leerlingenbegeleiding)

TB tuberculosis

WHO World Health Organisation

$\Delta$  symbol referring to the difference between two values

## **Preface**

Is a doctoral thesis on "social inequalities in health" in 2005 an anachronism? Is in a post modern society this topic no longer relevant? The sociological evolution in the last decade seems to indicate otherwise; increasing dualisation, individualisation, and the growth of ecological and socio-economic risks might have contributed in a socially selective way to the health of individuals and communities.

Since years, the Department of General Practice and Primary Health Care of Ghent University is involved in the development of a research line on social inequalities in health. Apart from the broader societal context, this development is motivated by the fact that access to health care has been a major focus in recent years in Belgium. In 2000, the research team was challenged by a request from the minister of social affairs, Frank Vandenbroucke, to explore the accessibility of the Belgian health care system for socially vulnerable groups. This request was a starting point for some of the research work we present in this book. Some of the other studies reported in this thesis have their origin in suggestions for research formulated by community workers. Important is that the research that has been done in the context of this research line fits in with our viewpoint that education, research and service delivery has to be socially responsible and accountable. This viewpoint is also reflected in the mission statement of the faculty of medicine and health sciences of Ghent University, which states that "the faculty wishes to provide solutions to health-related needs, in particular those of socially deprived groups both in Belgium and in the third world".

If this thesis contributes to a better understanding of the mechanisms that influence social inequalities in health, we consider this as a good result; if it inspires field workers or policy makers for actions to reduce social inequalities in health, we really achieved our goal.

Gent, 30/09/05

## **Chapter 1: Introduction**

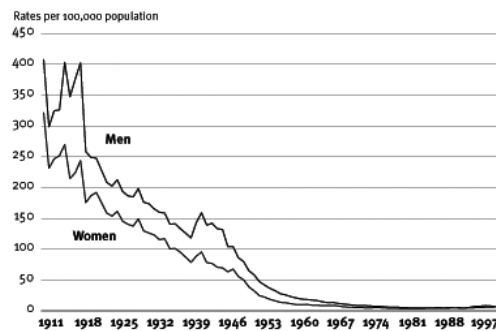
In this introduction we present the broader context of the research we have done. We performed several smaller studies, exploring different aspects of the domain of socio-economic health inequalities. Therefore we have chosen not to focus this introduction on the specific topics we have investigated but to present a broader framework in which our studies are situated and which can guide the reader through the different chapters (and the different studies) of this dissertation.

The main part of the introduction of this PhD dissertation is the exploration of the extent of the social gradient in health and the different explanatory mechanisms reported in literature. We start this introduction by outlining the historic background of research on social inequalities in health and illness and by some methodological issues researchers are confronted with when studying this topic. Next, we will report on the impact of area-level or society-level determinants of the social gap in health and on the impact of the accessibility of the health care system. These latter two topics are -briefly- reported as separate paragraphs in this introduction because they were the subject of some of our studies. However, for a more detailed state of the art on these topics, we would like to refer to the introduction of the corresponding articles.

### **1 Social inequality research**

The health of the populations in industrialised countries has never been better: infectious diseases that caused terror in families less than 100 years ago are now largely under control. With the important exception of AIDS and occasional outbreaks of new diseases such as SARS or the Creutzfeld-Jacob syndrome, or of old ones such as TB, infectious diseases no longer constitute much of a public health threat.[1][2] (see Figure 1) The last century, all European countries have enjoyed a continuous increase in life expectancy: the average gain between 1970 and 1998 was 6.4 years at birth and 3.4 years at age 65.[3] (see Figure 2)

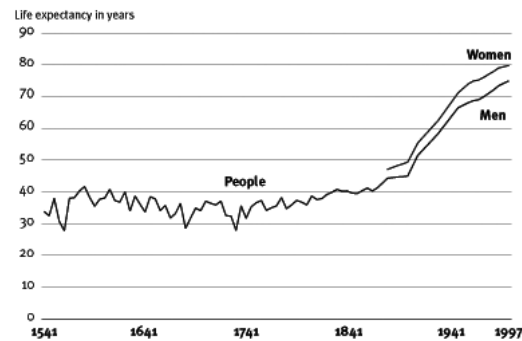
**Figure 1: A major decline in death from all infectious diseases in the 20th century**



#### England & Wales

Source: British National Statistic Website ([www.statistics.gov.uk](http://www.statistics.gov.uk))  
 Derived from: Great Britain Department of Health. Saving lives: our healthier nation. London: The Stationary Office; 1999.  
 Charlton J, Murphy M, editors. The Health of Adult Britain: 1841-1994. London: The Stationary Office; 1997. Additional data to 1997 from series DH2 nos 22,23,24.  
 London: The Stationary Office; 1997, 1998, 1999

**Figure 2: Major improvements in expectation of life after centuries of early death**



#### Life expectancy at birth in England & Wales

Source: British National Statistic Website ([www.statistics.gov.uk](http://www.statistics.gov.uk))  
 Derived from: Great Britain Department of Health. Saving lives: our healthier nation. London: The Stationary Office; 1999.  
 Drever F, Whitehead M, editors. Health inequalities. London: The Stationary Office; 1997.

However, as Isaacs et al. indicate that, any celebration of these victories must be tempered by the realisation that these gains are not shared equally by all members of society. People in upper social classes -those who have a good education, hold high-paid jobs, and live in comfortable neighbourhoods- live longer and healthier than people in lower social classes. Moreover, several studies suggest that the gap between social classes is widening.[1][2]

Central in this PhD dissertation is **the concept “socio-economic health differences”**. This concept is developed from one of the basic assumption in sociology and epidemiology: the social stratification, meaning that that society is layered; the bottom layers representing the less favoured ones in society, and the top layers representing the most favoured. “Socio-economic status” is used to indicate the relative position people occupy in this social stratification. The concept “socio-economic health differences” refers to the systematic differences in health between people with different positions in the social stratification. Important is that these differences in health are not confined to differences between the highest and the lowest social class. Health follows a social gradient: the higher the position in the social hierarchy, the lower the risk of ill health and premature death. [4][5]

## 2 Historic background of social inequality research

Socio-economic health differences are a classical topic in public health research. One of the oldest known studies in this area concerns the mortality in Geneva in the 17th century. Using ecclesiastical registers the life course of a large sample of the population of Geneva could be sketched. Since the profession of the individuals was also registered, it was possible to analyse mortality by social class and to provide evidence for the existence of socio-economic health differences. Studies about other large cities in Europe, performed on data from the 18th century, confirmed these findings.[4] (see Table 1)



**Table 1: Life expectancy in a number of European cities in the seventeenth and eighteenth century**

City	Period	Mean age at death (in years)			
		Higher class	Middle class	Lower class	Difference between highest class / lowest class (years)
Berlin	1710 – 1799	29,8	24,3	20,3	9,5
Geneva	17th century	35,9	24,7	18,3	17,6
Rouen	18th century	32,5	33,0	24,5	8,0
Trier	1770 – 1800	41,0	/	36,5	4,5
Neuruppin (1)	1732 – 1830	33,2	28,6	28,9	4,3
Durlach (1)	1751 – 1800	53,1	58,2	40,1	13,0
Spandau	1720 - 1869	58,5	56,5	54,0	4,5

(1) only adults

Adapted from: Schulz H. Social differences in mortality in the eighteenth century; an analysis of Berlin church registers. Int Rev Soc Hist 1991; 36: 232-329.

It took until the 19<sup>th</sup> century before data on health and illness in the different social classes were collected for research or policy reasons and in several European countries the first epidemiologists became active. In the UK, Edwin Chadwick was the central actor in the “Sanitary movement”, a movement of committed citizens and doctors aiming to study and to tackle the major problems of public health at that time. Chadwick’s “Report on the Sanitary Condition of the Labouring Population of Great Britain” sent profound shock waves through the Victorian reading public when it was published in 1842. It included not only data on morbidity and mortality, but also described the bad living conditions of the lowest social classes. The report exposed its audience to what physicians working among the urban poor, poor law officials, and the poor themselves already knew: that working-class neighbourhoods and streets were appallingly and dangerously filthy, that the poor were getting sicker more frequently and dying at a younger age than the better-off. The report’s publication was followed by Parliamentary inquiries, journalistic reports, and lobby groups. Within six years, this led to a renewed policy on Public Health: the Public Health Act (1848). [4][6]

In the same time period, Friedrich Engels’ “The Condition of the Working Class in England” (1845) described the horrifying conditions in which the working class lived and discusses the daily life of factory workers, the industrial accidents and the pollution of the city. He contrasted the squalid living conditions of the lowest social classes with the industrial grandeur of Victorian England.[7]

This period in which major attention was given to socio-economic health differences, was followed by a period of relative silence since the mid twentieth century. Since equal accessibility to the health care system for all citizens being an important objective of the welfare state, it was believed that the implementation of this welfare system in the post-war period would be able to tackle the problem of socio-economic health differences. Although measures taken in this spirit led to a stronger increase of the use of health services by lower income groups than the average increase for the total population, health differences did not disappear.[4]

In 1977 the Secretary of State for Social Services in the UK appointed a Research Working Group to assess the national and international evidence on health inequalities. The report concluded that the poorer

health experience of lower occupational groups applied to all stages of life. Moreover, if mortality rates of professional workers and members of their families had been applied to partly skilled and unskilled manual workers and the members of their families during 1970-1972, 74.000 lives of people aged under 75 would not have been lost.[8] Mainly because of the publication of the “Black Report” (named after the Chairman of the Working Group, sir. Richard Black) in the United Kingdom, renewed attention for socio-economical health differences arose and new studies and intervention programmes were designed.[4] For example three frequently quoted British studies that were (and still are) of major importance in the understanding of the mechanisms of social inequalities in health are the Whitehall I study, the Whitehall II study and the Acheson Report. [1] In the Whitehall I study 17.530 civil servants were classified according to employment grade, and mortality was recorded over a period of 10 years starting in 1967. A steep inverse relation between employment grade and mortality was observed.[9] Between 1985 and 1988, Whitehall II was initiated to investigate the degree and the causes of the social gradient in morbidity in a new cohort of 10.314 civil servants. [10] The Whitehall studies showed that mortality rates follow a gradient: in every occupational class the mortality rates are higher than in the class above.[1] The third study, the Acheson report, was published in 1998 and showed that although death rates had fallen among all social groups, the decline was substantially greater in the higher social classes, and the mortality gap was growing. The report also proposed 39 policy steps to improve health in domains such as taxes, education, employment, housing, etc. [11][12] However, the massive interest in socio-economic inequalities in health was not limited to the UK. For example also in The Netherlands extensive national research programmes were introduced to monitor the socio-economic inequalities in health and to explore the determinants of these inequalities. [13][14][15]

The World Health Organisation emphasizes on “equity in health”, referring to a situation in which everyone has an equal chance to reach his/her maximum potential health, rather than everyone having the same health status. In 1984 the member states of the Regional Bureau for Europe of the WHO recognised the importance of focused attention for socio-economical health differences. The first target in the “Health for all by the year 2000” declaration states: “By the year 2000, the differences in health status between countries and between groups within countries should be reduced by at least 25%, by improving the level of health of disadvantaged nations and groups.” To achieve this goal, the WHO proposes a multi-level approach: the monitoring of the differences in health status between different geographical areas and socio-economic groups within each country should be strengthened; priority should be given to the implementation of measures to reduce differences in health status; the basic prerequisites for health, such as food, housing and education, should be available for all; the living and working environments supporting health and adequate health care should be more accessible; and disadvantaged nations should obtain “special assistance and attention”. [16] It is clear that the objective has not been reached. In the more recent “Health 21” programme the topic of socio-economic health inequalities is again included as a major issue.[17][18]



### 3 Some methodological issues

#### 1.1 Measuring social position

Different indicators have been used to determine the socio-economic position of people in the social stratification. The most frequently used indicators are situated on the individual level such as occupational class/(un)employment, years of education, income/ownership of various assets e.g. a car, and indices based on residential area characteristics. [4][5] There has been much debate about what these various indicators actually measure, and how the choice of an indicator influences the pattern of inequalities observed. For example, measures based on occupation may have a different meaning for men as for women, or for people of working age as for youngsters.[11]

Some researchers suggest that **education** is the critical variable because it can be considered as the key to economic and social advancement; people with a higher education are more likely to get better jobs and to have a higher social status. Further, schools install behavioural and other values in children and give them knowledge to find and assimilate information and the skills to solve problems. [1][5][19][20] Other researchers point out that **income** is the fundamental indicator of social position: the poorer a person, the more likely it is that he/she will have to struggle to acquire basic needs such as food, to live in a safe and decent neighbourhood and to actively participate in society. [1][21] A third group of researchers emphasize **employment** as indicator for socio-economic position because of its relation with both income and prestige. [1][22]

Increasingly more attention is given to the **area** where people live as indicator for their socio-economic position. More deprived neighbourhoods are often less safe, have higher crime rates, a higher number of substandard housing, less recreation possibilities and green space, ... They offer residents less chances to improve their lives, no matter their educational level or profession. [1][23][24]

Davey Smith et al. plead for the use of **combined measures**. This is illustrated by their study in which they examined whether occupation or education is the most important indicator of mortality risk. Non-cardiovascular mortality was found to associate stronger with occupational class than with education, whereas cardiovascular mortality was stronger related to education than to occupation. The stronger association between non-cardiovascular mortality and occupation could reflect the direct occupational exposures that influence respiratory and digestive system diseases. The stronger association between cardiovascular mortality and education may reflect the function of education as index of socio-economic circumstances in early life, which appear to have an important impact on the risk of cardiovascular disease. Using combined measures of social position, makes it possible to understand the impact of socio-economic position on morbidity and mortality across all stage of life. [5]

However, the choice of indicator often dictated by the availability of data, more than by an explicit theory on the possible effects of different dimensions of socio-economic disadvantage.[5]

## **1.2 Artefacts in research**

Some researchers state that the observed differences in health between the socio-economical classes are artefacts in the research. [8] This is illustrated by the nominator / denominator bias which arises when different sources provide data for the nominator and for the denominator. Because of different definitions used by the two sources, the nominator and the denominator are measured in a different way and the result can be biased. For example, when comparing the healthy life expectancy in two countries the definition used to determine “healthy life expectancy” in one country can vary from the definition used in an other. Because of the large amount of evidence for socio-economic health differences delivered by studies with a high methodological quality the inequalities in health between social classes can no longer be considered as artefacts. However, the artefact theory has its value by emphasizing the importance of being attentive for potential bias in the interpreting of research results.

## **1.3 The availability of databases in Belgium**

Notwithstanding an increased attention for socio-economic health inequalities and the measures taken by governments, numerous international studies indicate that mortality and morbidity inequalities between lower and higher socio-economical classes persist over time, even in western, industrialised countries.[25][26][27][28] Until the beginning of the 90’s relatively few studies have dealt with mortality and morbidity differentials in Belgium due to a lack of appropriate statistical data. This explains why until then the research on socio-economic health differences in Belgium largely depended on smaller, regional surveys with limited research questions [29][30] and why Belgium is not included in most international comparisons. The construction of the National Mortality Database 1991-1996 and the implementation of the National Health Interview Surveys were the first steps in addressing these limitations and made it possible to assess the social morbidity and mortality gap in Belgium. [30][31][32]

The National Mortality Database 1991-1996 links, at an individual level, a wide range of socio-economic data from the 1991 Census to data from the National Register of births, deaths and marriages for the period 1991-1996. For all people who were included in the Census on March 1<sup>st</sup> 1991 (4.875.679 men and 5.10.407 women) was checked whether they died or moved in the period 1991-1996. In order to link both databases, a unique and anonymous identification number was added.[33]

The National Health Interview Surveys are cross-sectional surveys based on a representative sample of the population residing in Belgium. The surveys were organised in 1997, 2001 and 2004 and next survey is planned in 2008. The total sample size of the surveys is 10.221 for the 1997 survey, and 12.111 for the

2001 survey. Information is collected on health status, life style, utilisation of health care services and background characteristics such as SES, household type, urbanization, ... [34]

## 4 Socio-economic differences in health: descriptive studies

In the forthcoming paragraphs we will describe the social differences in mortality and morbidity. In each part an overview of the international literature will be presented, followed by a description of what is known concerning the Belgian situation.

### 1.4 Social differences in mortality

Over the past decades, evidence of a social gradient in **life expectancy** has accumulated. Regardless of the country, the used research methods or instruments, people in all layers of the social stratification have lower life expectancies than the people in the layer above.

Recently, Siegrist and Marmot (2004) gave an overview of the socio-economic differences in life expectancy in various Western countries. They reported mean differences in life expectancy between the upper social classes and the lowest social classes from 4 to 10 years.[35] For instance, in Sweden the difference between a 20-year-old man from the highest (higher non-manual) and a man from the lowest socio-economic group (unskilled manual) was 3.79 years. The corresponding figure for a 20-year-old woman was 2.15.[36] Similar results were found in Finland [38], the United Kingdom [38][39], the United States [40], Denmark, Norway, Italy, and Switzerland [38].

Socio-economic differences in overall mortality seem to be almost the same in most Western European countries. However, large variations exist in the social gradient of **cause-specific mortality** and the extent these causes contribute to the inequality in total mortality. E.g. death due to of ischemic heart conditions is strongly related to occupational class in England, Wales, Ireland, Denmark, Norway, Sweden and Finland, but not in France, Switzerland, Italy, Spain and Portugal. In these southern countries the differences in mortality are more attributable to cancer (except for lung cancer) and diseases of the digestive system.[25]

For Belgium information on differential mortality rates between social classes can be found in the National Mortality Database. For men as well as for women, the life expectancy is correlated with educational level and professional status, with the lowest numbers for people from the lower socio-economic classes (see Table 2) [31].

Numbers on socio-economic differences in cause-specific mortality are not available for Belgium.

**Table 2: Life expectancy in Belgium at the age of 25 years by sex and absolute level of educational attainment, males - females, Belgium 1991-1996/1997**

Educational attainment	Life expectancy	
	Males	Females
No diploma	48.1 (48.0-48.2)	55.0 (54.9-55.1)
Primary education	48.2 (48.0-48.3)	55.6 (55.5-55.8)
Lower vocational secondary education	50.0 (49.8-50.3)	57.3 (57.1-57.5)
Lower technical secondary education	50.4 (50.2-50.6)	57.8 (57.4-58.2)
Lower general secondary education	50.0 (49.7-50.2)	57.0 (56.8-57.2)
Higher vocational secondary education	50.6 (50.3-51.0)	57.5 (57.2-57.8)
Higher technical secondary education	51.2 (51.0-51.4)	58.1 (57.7-58.4)
Higher general secondary education	50.9 (50.8-51.1)	57.6 (57.4-57.8)
Higher education of the short type	53.4 (53.1-53.6)	58.1 (58.0-58.3)
Higher education of the long type, incl. university	53.6 (53.4-53.8)	58.5 (58.0-59.0)
Total	49.59 (49.55-49.64)	55.87 (55.83-55.92)

Source: Bossuyt N, Gadeyne S, Deboosere P, Van Oyen H. Socio-economic inequalities in health expectancy in Belgium. Public Health 2004; 118: 310.

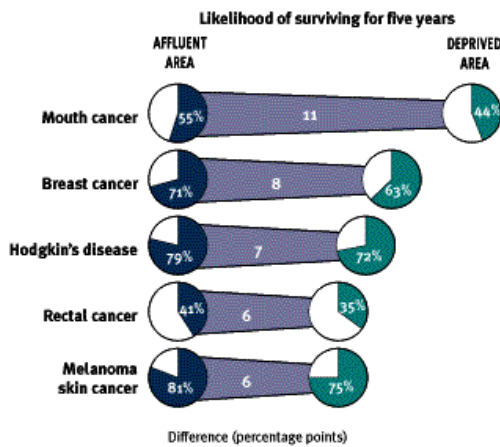
## 1.5 Social differences in morbidity

A social gradient was not only found for total mortality, but also for **morbidity**. Socio-economic differences are demonstrated for coronary heart diseases [26], smoking-related cancers [41], mental health [42], diabetes type I [43], oral health [44], low back pain [45], ...

In a multi-centre study, Kunst et al. determined the trends in socio-economic inequalities in self-assessed health in 10 European countries. Concerning men between 25 and 69 years old reporting their health as “fair” or “poor”, prevalences between 22.1 per 100 respondents (in Norway) and 58.3 per 100 respondents (in West Germany) were found for men from the lowest educational levels. In comparison: for men from the highest educational levels prevalences between 11.1 per 100 respondents (in The Netherlands) and 45.8 per 100 respondents (in West Germany) were found. [27]

When looking at the **stages of diseases at diagnosis**, the same pattern can be found. For example, the likelihood that breast cancer is diagnosed at high grade or advanced stage is higher in the lower social classes.[46] This can partly explain the social gradients that are also found in the **chances on survival** when having a serious illness: the chance to survive cancer [47][48][49], a heart disease [50] or an HIV-infection [51] is higher for patients from higher socio-economic groups. This is illustrated in Figure 3. In this figure area deprivation is used as measure for socio-economic status.[52]

Figure 3: Survival of cancer is better in affluent than in deprived areas



England (Mouth cancer: England & Wales), diagnosed in 1986-90. Age standardised. The bars between the circles represent the difference in survival rates between areas.

Source: British National Statistic Website ([www.statistics.gov.uk](http://www.statistics.gov.uk))

Derived from: Great Britain Department of Health. Saving lives: our healthier nation.

London: The Stationary Office; 1999.

Office for National Statistics. Cancer Survival Trends in England and Wales 1971-1995.

Deprivation and NHS Region. London: Stationary Office; 1999.

In Belgium the National Health Interview Surveys document the social gradient in self-reported **health** and in the prevalence of self-reported **risk-factors**. Belgians with lower educational levels report more chronic illnesses, have more long-lasting physical disabilities, more disabilities for short periods, a worse perceived general health status and a worse perceived mental health status.[46]

Using the National Mortality Database, Bossuyt and colleagues calculated the **healthy life expectancy** (the number of years a person can expect to live in good health).[31] The results are shown in Table 3.

Table 3: Healthy life expectancy in Belgium by sex and absolute level of educational attainment, males - females, Belgium 1991-1996/1997

Educational attainment	Health life expectancy	
	Males	Females
No diploma	28.1 (23.6-32.6)	24.4 (19.8-29.0)
Primary education	30.8 (28.7-32.8)	29.8 (27.4-32.3)
Lower vocational secondary ed.	33.1 (30.3-36.0)	34.7 (31.9-37.4)
Lower technical secondary ed.	36.5 (33.9-39.1)	30.8 (27.2-34.4)
Lower general secondary ed.	38.0 (35.4-40.5)	40.3 (37.7-42.8)
Higher vocational secondary ed.	37.6 (34.2-41.0)	40.5 (36.8-44.1)
Higher technical secondary ed.	40.8 (38.9-42.8)	44.9 (41.8-48.0)
Higher general secondary ed.	42.6 (40.7-44.5)	46.5 (44.3-48.8)
Higher education of the short type	46.0 (43.9-48.1)	41.6 (39.0-44.2)
Higher education of the long type, incl. university	45.9 (44.3-47.5)	49.1 (46.6-51.6)
Total	37.5 (36.8-38.2)	37.6 (36.8-38.5)

Source: Bossuyt N, Gadeyne S, Deboosere P, Van Oyen H. Socio-economic inequalities in health expectancy in Belgium. Public Health 2004; 118: 310).

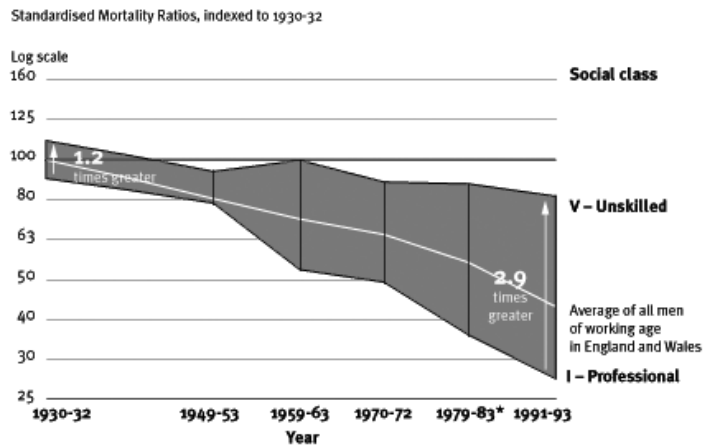
Similar results were found for 'life expectation without physical limitations' and for 'life expectation in good mental health'. [32]



## 1.6 A widening gap?

Although the health of the overall population improves, during the past decades several European studies report a **widening of the relative inequalities in mortality**. [53][54][55][56][57][58] (see Figure 4) For instance, in Sweden the difference in life expectancy between a 20-year-old man from the highest socio-economic group and a man from the lowest socio-economic group increased between 1980 and 1997 from 2.11 years in 1980 to 3.79 years in 1997.[36]

**Figure 4: The widening mortality gap between social classes**



\* 1979-83 excludes 1981

England and Wales. Men of working age (varies according to year, either aged 15 or 20 to aged 64 or 65)

Note: These comparisons are based on social classes I & V only

Source: British National Statistic Website ([www.statistics.gov.uk](http://www.statistics.gov.uk))

Derived from: Office for National Statistics, Decennial Supplements, indexed by Department of Health Statistics Division 2.

In: Great Britain Department of Health. Saving lives: our healthier nation. London: The Stationary Office; 1999

This widening relative gap is mostly due to a faster decline in mortality among people of higher socio-economic status than the decline among those of lower socio-economic status. This is probably due to faster proportional mortality rates e.g. for cardiovascular diseases. [59] [60]

Other researchers suggest that the widening gap in mortality can be explained by the unfavourable social and economic changes that have taken place in the last decades, e.g. the increasing income inequality. These changes have affected the total population, yet they might have had a larger impact on the lowest socio-economic classes. [27] [53] [61]

One could also hypothesize that the widening gap could be explained by demographic changes over time: the volume and the composition of the lower socio-economical classes might have changed over decades. A few decades ago, the upper class was very small, there was hardly any middle class and the lower classes were very large because of the unequal distribution of for instance the opportunities for good education. Later, with the democratization of the educational system and other societal developments, this changed: people moved upward to the middle class and, possibly, the most vulnerable people remained in the lowest socio-economic classes.

However, the declines of absolute mortality have mostly been similar in the upper and lower socio-economic groups, resulting in a more or less **stable absolute inequality gap**. [60]

Several national studies report on the **gap in morbidity**. [27] For instance, an important set of studies looking at changes in social inequalities in morbidity over time are the Whitehall studies. In the 20 years separating the two studies there was no decrease in social class difference in morbidity: the same inverse association between employment grade and prevalence of angina, electrocardiographic evidence of ischemia, and symptoms of chronic bronchitis persisted. The same conclusions could be drawn for self-perceived health status and health-risk behaviours including smoking, diet, and physical exercise. [10] However, the findings of the studies reporting on the morbidity gap are not as consistent as those for mortality; some report a widening gap in self-assessed general health, and some a narrowing gap. [27] Hereto, Kunst et al. recently published an overview of the trends in socio-economic inequalities in self-assessed health in 10 European countries (time gradient min. 7 years, max. 10 years). They concluded that socio-economic inequalities in self-assessed health are stable in European countries. For all 10 countries together, the odds ratios comparing low with high educational levels remained stable for men, but increased slightly for women. The odds ratios comparing low with high income quintiles showed an increasing tendency for some countries (e.g. Spain) but not for others (e.g. the Nordic countries). [27]

For Belgium a socio-economic time gradient in life expectancy cannot be calculated: the National Mortality Database (which gives information on life expectancy) was only constructed once. Future constructions of this database would make it possible to analyse trends in life expectancy in Belgium. Yet, an analysis of the 1997 and the 2001 National Health Interview Survey gives information on trends in self-reported health status. The result of the comparison between both surveys is shown in Table 4.

**Table 4: Socio-economic inequalities in self-assessed health status and number of diseases according to the Belgian National Health Interview Surveys 1997 and 2001 (only the respondents 15 years old and over)**

Educational level	Self-assessed health status: good or very good (%)			Mean number of diseases or chronic conditions in the last year* (mean)		
	1997	2001	$\Delta$	1997	2001	$\Delta$
No degree	58,3	61,0	+2,7	1,8	1,8	=
Primary school	61,1	59,2	-1,9	1,5	2,2	+0,7
Lower secondary school	69,2	68,1	-1,1	1,3	1,5	+1,2
Higher secondary school	81,8	81,7	-0,1	0,9	1,1	+0,2
Higher education	86,5	86,4	-0,1	0,8	0,9	+0,1
Total (n)	78,1 (7.628)	77,1 (9.071)	-1,0	1,0 (9.796)	1,2 (11.721)	+0,2
$\Delta$ between highest and lowest educational class	28,2	25,4	-2,8	1,0	0,9	-0,1

\* number of diseases out of a list of 34 diseases or chronic conditions (1997) / out of a list of 32 diseases or chronic conditions (2001)

Sources: Demarest S, Leurquin P, Tafforeau J, Tellier V, Van der Heyden J, Van Oyen H. De gezondheid van de bevolking in België. Gezondheidsenquête door middel van Interview, België 1997. Afdeling Epidemiologie, 1998; Brussel: Wetenschappelijk Instituut Volksgezondheid.

Demarest S, Van der Heyden J, Gisle L, Buziarsist J, Miermans PJ, Sartor F, Van Oyen H, Tafforeau J. Gezondheidsenquête door middel van Interview, België 2001. Afdeling Epidemiologie, 2002; Brussel: Wetenschappelijk Instituut Volksgezondheid, IPH/EPI REPORTS N° 2002 – 25.

In the period 1997-2001 the self-assessed health status worsened (less people indicated their health status as good or very good) and the number of diseases increased. The table clearly indicates a socio-economic

gradient for both indices. The inequality gap seems to decrease for self-assessed health status (28,2 in 1997 versus 25,4 in 2001) and to slightly decrease for the mean number of diseases or chronic conditions (1,0 in 1997 versus 0,9 in 2001). The finding of only slight changes could probably be explained by the short time period between the two surveys.

## **5 Exploring the causes of socio-economic differences in health**

In the above paragraphs we illustrated the gradient in mortality and morbidity across the social classes. Although these differences can be found in all countries, the magnitude seems to vary considerably. By exploring the causes of the inequalities in health we can identify the aspects that are amenable to modification and that therefore can be of potential significance for interventions.

Making an overview of the explanations for socio-economic health differences is complex and determining the exact contribution of the identified determinants is even more complex. Not only because researchers adopt different frames of reference (sociology, social epidemiology, community psychology ...), but also because explanations are not mutually exclusive and are closely interrelated. [14][62]. For example, people from lower social classes smoke more than people from higher social classes. However, it might be possible that this is due to a compensation for unfavourable living conditions such as low income. This implies that the unequal distribution of health related risk factors across socio-economic groups can partly be ascribed to the unequal distribution of material factors.[14][63] This makes unravelling the interrelationships between the determinants very complicated.

### **1.7 Four perspectives to explain socio-economic health inequalities**

Many studies have suggested explanations for the undeniable association between socio-economic position and health. Traditionally they can be grouped in two categories: the first category comprises the social selection theories, the second the social causation theories. [8][64] In his recent review of explanatory theories for socio-economic health differences, Mackenbach used the concept of “perspectives” to describe the categories and he added a third perspective: the lifecourse perspective. [65] We adopted Mackenbach’s classification (social selection, social causation and lifecourse), as well as the “perspectives” approach because it illustrates better the complementary character of the hypotheses.

#### ***1.7.1 The social selection perspective***

The social selection perspective asserts that health or a determinant of health determines socio-economic position and largely explains the socio-economic differences in health. This mechanism incorporates the idea of social mobility: an individual’s social position can change within a lifetime, compared either with his/her parents’ social status (intergenerational mobility) or with his/her social status earlier in life

(intragenerational mobility). According to the social selection perspective, health (or a determinant of health) makes people move upwards or downwards the social ladder. [8][64][66][65] One version of the social selection hypothesis is the “**direct health selection**”, i.e. health itself can directly influence one’s social position with individuals in poor health being more likely to move downward and less likely to move upward on the social ladder. There is some evidence that health determines socio-economic status. However, the effect of the direct selection mechanism on the social gradient is small and therefore direct social mobility cannot be regarded as a major explanation for inequalities in health. [67][68] Moreover, this effect is variable. One could expect that the direct health selection increases the magnitude of the socio-economic gradient in health as the lowest socio-economic classes will have the highest concentration of people with a worse health and the highest classes the highest concentration of people with a good health. However, some studies demonstrate that social mobility bridges the gap between the social classes. It has been suggested that this decrease in inequality could be due to the fact that the people who are downwardly mobile because of their health, still have better health than the people in the class of destination, upgrading this class. Similar, the upwardly mobile people will lower the mean health in the higher socio-economic classes. [67][68]

A more common version of the social selection hypothesis is “**indirect selection**”: social mobility is selective on determinants of health, not on health itself [69][65] for instance coping styles [70] In this context, controversy exists on the possible indirect selection mechanisms of cognitive ability. Studies show an association between cognitive ability and health (with a worse health for people with lower cognitive abilities) [64][71] but the extent to which cognitive ability explains the association between health and social position is limited [64].

### ***1.7.2 The social causation perspective***

In this perspective health does not directly or indirectly determine social position, but social position determines health through intermediate factors. Socio-economic health differences occur when the quality of these intermediate factors is unevenly distributed between the different socio-economic classes: socio-economic status determines a person’s behaviour, life conditions, etc. and these determinants induce higher or lower prevalence of health problems. [8][11][65] The main groups that have been identified as playing an important part in the explanation of health inequalities are material or structural circumstances, psychosocial factors, behavioural and biological factors and health care utilisation. [8][14][63][65]

The first set of factors, the **material or structural circumstances**, are linked to the physical environment (e.g. housing, physical working conditions) as well as to economic hardship (expressed by e.g. individual income). The material or structural theories state that health inequalities result from the differential accumulation of exposures and experiences that have their sources in the material world.[72] The fundamental cause theory indicates that social factors shape the distribution of disease in a predictable way, “with the result that people who have more resources in terms of knowledge, money, power prestige, and

social connections are better able to avoid risks (...) and to adopt the protective strategies that are available at a given time and given place”. [73]

The second set of factors, the **psychological circumstances**, include stressors (e.g. negative life events), stressful living circumstances (e.g. high debts), (lack of) social support, personality characteristics, coping styles, ...[65] Some studies refer to the association between socio-economical status and health locus of control. This concept refers to the way people perceive the events related to their health: as controllable (internal control), as a coincidence (coincidence oriented) or as controlled by others (mostly by doctors) (external control). People with an education below university level more frequently have an external locus of control. [74] Also coping mechanisms seem to vary according to educational level: seeking social support, confrontation, and showing emotion were coping styles less used by people with a lower educational level. At the other hand, they had higher scores on comforting cognitions (optimism).[121] An important stressor reported in literature is low job control. Studies show that this stressor is more present in lower socio-economic groups, resulting in higher levels of stress and higher risks for a range of diseases. [35]

The third set includes the **behavioural and biological factors**. As they can be unevenly distributed between different socio-economic classes, they could be important determinants of the social gradient in health. [75] For example, several studies have shown an association between social position and cardiovascular disease. This association could partly be explained by social differences in health related behaviours such as smoking, physical exercise and diet. [41] In most European countries smoking is more prevalent among the lower educated. However, the social difference in smoking tends to vary among the countries (e.g. in Norway women from the highest educational class smoke more) and are larger among younger than older people in most countries. [76] Another behavioural determinant of cardiovascular risk is the involvement in physical activity: it has been proven to have both a direct association with health outcomes and an indirect effect as it is associated with obesity. The Whitehall II study shows an association between both obesity and lack of physical activity, and social status for men, but less stronger for women.[75] Several studies reported also higher fruit and vegetables consumption among people of higher socio-economic classes.[77][78][93]

Also biological factors might be unevenly distributed across social classes. For example, however there is little empirical evidence in this area, genetic factors might explain some of the social gradient in health. Mackenbach concludes in a recent review on genetics and health inequalities that the most plausible specific hypotheses relate to the genetics determinants of personal attributes (e.g. personality, bodily and mental fitness) that influence educational and occupational achievement, and also determine adult health, either directly or through health related behaviours.[65]

The fourth and last set of factors relate to **health care utilisation**, including contacts with the GP, specialist, hospitalisation, ... (see also: 7. Inequities in medical care use).

However, the association between social position and health is reduced but not eliminated when these behaviours are statistically controlled for (see further).[9][75]

In the context of the impact of psychological circumstances and of behavioural and biological factors, we mention the “hierarchy-stress”-theory. This theory states that the perception an individual has of his place on the societal ladder can produce negative emotions such as shame and distrust. These emotions are internally translated into poorer health via psycho-neuro-endocrine mechanisms and stress induced behaviours such as smoking. Simultaneously, the emotions are externally translated into antisocial behaviour, reduced civic participation, and less social capital and cohesion within the community. In this way, perceptions of social rank have negative biological consequences for individuals and negative social consequences for how individuals interact.[72][75][77]

### ***1.7.3 Life course perspective***

Inequalities in health exist for both males and females at every stage of life [80][81], but the steepest gradients are observed in early childhood and midlife.[35] For instance concerning early stages of life a significant association was reported between socio-economic status of the family and sudden unexpected death in infancy.[82] In Belgium, unemployed women have a twofold risk of having a stillborn child than non-manual workers, and a higher risk of early child mortality.[83]

Over the last decade several authors have illustrated the association between socio-economic position as a child and the risk of illness and premature death later in life.[71][84][85] Recently, there is an increasing interest in the cumulative effect of socio-environmental exposures over a life time. Davey Smith et al. showed that socio-economic position during ones lifetime (and not only in childhood) affects life and death. Moreover, the socio-economic influences on particular causes of death may have different critical times. Hereto he analysed individual's social position at three points in life: as a child (measured by the social class of the father's job), as a young adult (measured by the social status of the first job), and later in adulthood (measured by the social class of the job at that time). Age adjusted relative death rates in comparison with men of non-manual social class locations at all three stages of life were 1.29 in men of two non-manual and one manual social class; 1.45 in men of two manual and one non-manual social class; and 1.71 in men of manual class at all three stages. Therefore “the risk of premature death may reflect the accumulation of environmental insults or the cumulative effects of unfavourable behavioural or psychological factors, which progressively increase susceptibility to disease.” [86] For example, a Norwegian study showed that higher risks of premature death in men who had a limited education and then worked in manual occupations and lived in poor housing.[86][87]

#### ***1.7.4 The contribution of the presented perspectives to the explanation of socio-economic health differences***

In 2005, Mackenbach performed a literature review in which he reviewed the current theories on the explanation of socio-economic inequalities in health in industrialised countries. He came to the conclusion that the social causation mechanism seems to be the most important explanation for socio-economic health differences. Multivariate analyses of longitudinal studies suggest a total contribution of between 40% and 70% of the total explanation of the social gradient in health. [65] However, no exact contribution of the different sets of determinants within this mechanism (health risk behaviour, material conditions, ...) was reported.

As indicated earlier, very few empirical studies give information on the relative impact of the various mechanisms and factors described in the above paragraphs. This could be explained by the fact that to investigate this, a database is needed that includes information on social position, on health outcomes and on various individual and contextual characteristics of the respondents e.g. health related behaviour, psychosocial factors (personality characteristics, coping styles, social support, negative life events, ...), material circumstances (financial situation, neighbourhood characteristics, physical working conditions, ...), childhood circumstances and health care utilisation. Building up a database from scratch that contains all this information would be very expensive. An alternative is to link existing databases for example, a National Health Interview Survey to a database on health care consumption. However, linking can be technically complex and time-consuming, and will provide a database with several limitations.

One of the few comprehensive, empirical studies and probably the one that is most generalizable to Belgium, that tested the relative impact of the various determinants, is the Dutch GLOBE study ("GLOBE" being the Dutch acronym for Health and Living Conditions of the Population in Eindhoven and surroundings).[14] This is a prospective cohort study specifically aimed at explaining socio-economic health inequalities in the Netherlands. In this study new data were collected and linked to existing databases. 18.973 inhabitants of 18 Dutch municipalities in the south-eastern region of The Netherlands were questioned by a postal survey. From this group, 5.667 inhabitants were also interviewed and follow-up data was collected. Finally, this database was linked to national databases on e.g. health care use. This study shows that a substantial part of the health problems in the lower socio-economic groups (more specifically mortality, acute myocardial infarction and self-reported health) could be attributed to the higher frequency of **unhealthy behaviour** in these groups.[14] An important finding of this study is that this unhealthy behaviour could partly be attributed to material circumstances (such as income) and psychosocial factors (such as locus of control). Table 5 presents the relative importance of the independent effect of behaviour (i.e. the part of behaviour that is not attributable to material circumstances) and the indirect effect of material factors (i.e. the impact of material factors through increased risk-behaviour).

Important is, however, that **material circumstances** also have a direct effect on health inequalities in all-cause mortality, self-reported health and acute myocardial infarctions. The direct effect of material circumstances is larger than the independent effect of behaviour.[14]

**Table 5: Effect of adjustment for behavioural and material factors on the association between educational level and all-cause mortality, with relative hazard (RH) by educational level and percentage of change in RH (a) 1991-1996, GLOBE study**

Educational level <sup>b</sup>	Confounders Model 1 <sup>c</sup> : RH	Confounders + behaviour Model 2 <sup>d</sup> : RH	Confounders + material factors Model 3 <sup>e</sup> : RH	Confounders + material factors + behaviour Model 4 <sup>f</sup> : RH	Independent effect behaviour <sup>g</sup>	Indirect effect material factors (overlap) <sup>h</sup>	Direct effect material factors <sup>i</sup>
1 (High)	1,00	1,00	1,00	1,00			
2	1,28	1,13	1,15	1,07	75-46=29%	54-29=25%	46-25=21%
% change		54	46	75			
3	1,48 <sup>j</sup>	1,25	1,23	1,11	77-52=25%	48-25=23%	52-23=29%
% change		48	52	77			
4 (Low)	1,64 <sup>j</sup>	1,30	1,21	1,05	92-67=25%	53-25=28%	37-28=39%
% change		53	67	92			

a: Percentage change calculated by (RH model 1) – (RH model 2,3 or 4)/[(RH model 1) –1]

b: high (1) = higher vocational school and university; (2) intermediate vocational school and intermediate or higher secondary school; (3) lower vocational school and lower secondary school; low (4) = primary school.

c: Model 1 = adjusted for the confounders age, gender, marital status, religious affiliation, and degree of urbanization.

d: Model 2 = educational level + confounders + alcohol consumption + smoking + body mass index + physical activity.

e: Model 3 = educational level + confounders + financial problems + employment status + income proxy.

f: Model 4 = educational level + confounders + alcohol consumption + smoking + body mass index + physical activity + financial problems + employment status + income proxy.

g: Percentage reduction of relative hazards for educational groups due to inclusion of behavioural factors (model 4) to a model already containing material factors (model 3): % model 4 - % model 3.

h: Calculated by subtracting the independent effect of behavioural factors from the total effect of behavioural factors (model 2): % model 2 – independent effect of behavioural factors.

i: Calculated by subtracting the overlap from the total effect of material factors: % model 3 – overlap.

j: 95 % confidence interval does not include 1,00

Source: Van Lenthe F, Schrijvers C, Droomers M, Joung I, Louwman M, Mackenbach J. Investigating explanations of socio-economic inequalities in health. The Dutch GLOBE study. Eur J Public Health. 2004;14:63-70.

With regard to **psychosocial factors**, socio-economic inequalities in health could partly be explained by a differential exposure to stressful living conditions and negative life events. Van Lenthe et al. could not confirm the hypothesis that a differential vulnerability to the health impact of these stressors contributed to the inequalities. However, a high level of hostility, low perceived control, and low job control were found to explain the social gradient in health. [14]

Another substantial part of the inequalities in health could be attributed to **unfavourable conditions in childhood**. Especially low education of the mother, low occupational level of the father and a poor financial situation of the family played an important role. Childhood circumstances partly influenced adult health through adult health-related behaviour (e.g. alcohol consumption) and partly through adult psychological attributes (e.g. coping styles). However, only a small part of the socio-economic health inequalities at adult age could be explained by the selection mechanism.[14]



## 6 The impact of determinants related to the meso-level

A growing number of studies shift their attention from characteristics of the individual level to **characteristics of the meso-level** (for instance the area or the neighbourhood) when looking at socio-economic health differences. The studies on the neighbourhood-level contend that the place where a person lives makes a difference to health related behaviour and health outcomes, even after adjusting for individual risk factors such as smoking or low income.[88][89][90][91][92] For example, a follow-up study in all women and men in Sweden (2.6 million people) demonstrated that the risk of developing coronary heart disease was 87% higher for women and 42% higher for men living in the most deprived neighbourhoods compared to women and men living in the most affluent neighbourhoods, after controlling for individual income.[89]

The **impact of neighbourhood characteristics** on socio-economic health inequalities seems not to exceed the impact of the determinants on individual or household level. However, the exact contribution to the socio-economic inequalities in health is reported to vary between “as large as the impact of individual social status”[91] and “relatively small” [24][90][92]. A possible explanation for this variation could be that the association between neighbourhood characteristics and health tends to vary according to health outcome and geographical units (e.g. province or country). [94][95] For instance, neighbourhood deprivation was associated with health in both London and Helsinki, but in London this association was considerably stronger. This variation between geographical units could partly be explained by segregation (the greater the segregation, the stronger the association) and differences in the provision of local services and facilities. Also, local and national policies that reduce, or restrict, inequality between areas by tackling segregation and providing equal access to quality services, may vary among countries. [96]

Further, neighbourhood deprivation seems **to affect rich and poor individuals’ health differentially**: the positive effect of a non-deprived area on health may be more important for people with a lower socio-economic position, than the negative effect of a deprived area on the health of people with a higher socio-economic position.[24] In their explanation of this finding, Stafford and Marmot found evidence for the “collective resources model”: people in non-deprived areas have better health than people in deprived areas after controlling for individual factors, because there are more collective resources for instance more green spaces and leisure possibilities or a better supporting social network in the neighbourhood. Wealthier and more powerful individuals attract high quality amenities and services that are beneficial for all inhabitants, including the poorer. The beneficial effect of these resources are greater for poorer individuals because they may be less able to purchase goods and services privately and depend more on locally provided facilities. By proving this, their study refuted another commonly suggested hypothesis namely that the disparity between an individual’s own social position and the social position of those living nearby affects his health. This would cause that a poorer individual living in a more wealthy area may have worse health than a poorer individual living in a deprived area. [24]

In searching for explanations of the association between neighbourhood deprivation and health, much attention is given to the role of “**social capital**”. This is a highly contested concept and many authors have explored this. Putnam, one of the key contemporary advocates of the concept, defined social capital as “the features of social organisation such as networks, norms and trust that enable participants to act together more effectively to pursue shared objectives” (Putnam, 1993). [97] In particular, it has been suggested that levels of social capital vary from place to place and these variations may account for the variations in health between neighbourhoods.[95] Nowadays, social capital is often emphasized to be a property of spatially-defined communities ranging from electoral wards, through villages and regions, to national states. [95] Various studies looked at the association between (aspects of) social capital and health on a state-level. For instance Kawachi et al. found an association between various aspects of social capital, such as trust, perceived fairness, perceived lack of helpfulness of others and membership of groups, and mortality rates for American states. [98] People living in the states with the lowest social capital had higher probabilities of worse self-reported health, even after controlling for individual factors such as social position and health-related behaviour.[99]

Less studies exist on the influence of social capital on small-area variations in health such as the level of statistical sectors and the findings are often less consistent. [95] An important study was that of Subramanian et al. He found that higher levels of community social trust (as a component of social capital) were associated with a lower probability of reporting poor health. However, this association was strongest for individuals with high perceptions of trust. Subramanian et al. concluded that “if social capital has beneficial effects, it might not have the same beneficial effect for all, but stronger for those who express high levels of trust or who value trustworthiness in others” (Subramanian 2001).[100]

In most explanatory models for socio-economic differences in health, the direct impact of absolute income and absolute material standards such as bad housing, poor diets, inadequate heating, ... is indicated. An alternative theory focuses on the **distribution of income within a society** as predictor of health: unequal distributions of income (mostly measured by Gross Domestic Product per person) are associated with higher mortality and lower life expectancy in populations.<sup>0</sup> Although, this theory was subject to some controversy <sup>0</sup>[103] , income inequality was demonstrated for several countries including the United States[104] and Britain[105]. For instance, Kennedy et al. proved that inequality in the distribution of income in the US is associated with an adverse impact on health, independent of the effect of household income and other individual confounding factors such as age, gender, race, health-related behaviour, insurance coverage and household characteristics. Moreover, the effects of income distribution on self-rated health were not limited to people in the lowest income groups; in states with the greatest inequalities in income people in the middle income groups rated themselves as having poorer health than those in middle income groups in states with the smallest inequalities.[104]

In the explanation of this association, the so called “neo-material interpretation” seems to have the largest impact: the effect of income inequality on health reflects a combination of negative exposures and lack of

resources held by individuals, along with systematic underinvestment across a wide range of human, physical, health, and social infrastructure. In this theory, unequal distribution of income is one result of historical, cultural, and political-economic processes that influence the private resources available to individuals and shape the nature of public infrastructure.[72]

## 7 Inequities in medical care use

**Differences in health care utilisation** by socio-economic status have been reported by a number of researchers. Most studies show that people with low socio-economic status make more use of health care facilities than people with higher socio-economic status. [106] [107]

An important reason for this difference in medical care use, could be that people from a lower socio-economical class tend to have worse health than people from a higher socio-economical class. [108] This implicates that the former **need more health care**. The ECuity II study provided important information on equity in health care utilisation across income groups, i.e. the extent to which adults in equal need for physician care have equal rates of medical utilisation in 21 OECD countries, including Belgium. [109][110] For GP utilisation, a significant degree of horizontal inequity was found favouring the worst off: people from the lower income quartiles visit a GP more frequently after correction for self-reported health. However, the rich are significantly more likely to seek help from a medical specialist and also to seek this help more frequently than the poor, also after correction for self-reported health. Finally, a pro rich distribution of dentist visits was found. [110] Other studies report similar results. [106][107][111] One of the limitations of the ECuity II study and several other studies is the use of reported health care consumption. The question arises whether these associations would hold when including registered health care utilisation data.

There may be numerous **financial barriers** in the way of people from the lowest socio-economic classes who need access to health care. In the most extreme situation people do not get any form of health care. Alternatively they can postpone medical care. In the National Health Interview Survey 2001 29% of the households included, report that the expenses for health care do not fit in their budget and 18,5% of the households in the lowest income classes (income <750 euro/month) had to postpone medical care in the past 12 months because of financial restraints. [112] As a consequence of postponing health care, people of lower socio-economic classes are more likely to suffer from long-standing and complicated conditions. Also they may take longer to recover from treatment due to their generally poorer health. [113] This might lead to higher medical care bills.

However, even with universal services, where there are no financial restraints to visit a doctor, substantial socio-economic differences in the use of medical care remain.[113][115] The question arises what other factors might contribute to the socio-economic differences in the use of medical care.

To study health services utilisation, several models were formulated. A widely used model for health care utilisation is the Andersen and Newman Behavioural Model of Health services utilisation which was first published in 1973.[116] The revised and updated versions of this model are still frequently used for evaluating the accessibility of health care systems or as the basis for the development of disease-specific models. [116][117][118][119][120] The model suggests that use is a function of a predisposition by people to use health services, factors that enable or impede such use, and people's need for care. The need component reflects the urge to seek medical care because of the health status of the individual. The enabling component suggests that people, in addition to their medical need, must have the means to use health care services (e.g. health insurance, family income, transportation). Finally, the predisposing component involves characteristics determining an individual's inclination to use medical care (e.g. age, education, values about health and illness, psychosocial factors).[116][121]

Van der Meer et al. studied the impact of **psychosocial factors** on the higher GP consultation rates of people with a low education. They found that tendency to consult (attitude towards health and health care) was the only psychosocial factor that explained the socio-economic gradient in medical care use partially. Long-term stressful conditions, social support, locus of control and diverse coping styles were not found to explain the difference. However, it is possible that these factors have no direct effect on health care utilization but that they mainly influence health care utilization through health problems. [121]

It is also possible that the higher use of medical care from a general practitioner can be explained by a higher frequency of **relatively minor health problems and acute conditions** in lower socio-economic classes. Yet, most studies on health care use only control for long-standing diseases and chronic conditions.[121]

Also the **doctor-patient interaction** might play a role in the explanation of the differential in medical care use. Doctors might adopt a different communication style with patients from different socio-economic classes. [122][123][124] This might have an impact on satisfaction and on future medical care use. [125][126][127]

Qualitative studies with patients and with health care providers revealed other possible factors such as difficulties in obtaining childcare when going to a doctor, problems with transportation, and prior negative experiences with the health care system. [128] However, no studies were found testing the association between these factors and health care use, controlling for confounding factors such as need.

Not only the cost but also the **availability of services** can influence medical care use. In most European cities, it is commonly reported that health care providers and services have gravitated towards the more affluent parts of town, while at the same time there are severe shortages of facilities and staff. For people

living in these under-served areas, using health care means the need of transportation and more time loss.  
[113]

Some studies indicate that inequalities in access, quality and outcome of curative health care services play a minor role in the origin of socio-economic health differences compared with the wider social determinants of socio-economic health differences. But, access to essential health care services can also play a vital role in dealing with or ameliorating the health damage caused by these other influences, since the health care system can intervene at strategic points in some of the above pathways of which the interaction between health-related behaviour and health is the most obvious one. [113]

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## Chapter 2: Research questions

With our research we try to answer some unsolved questions concerning the prevalence and the determinants of socio-economic health inequalities in Belgium.

We performed six studies, described in seven papers: two quantitative cross-sectional studies focusing on prevalence rates of respectively head lice and early childhood caries; a quantitative analysis on a dataset created by linking the National Health Interview Survey 1997 and registered medical care use data; two qualitative studies: one with people living in poverty and one with GPs; and one systematic literature review on doctor-patient communication. Additionally, in two editorials the role GPs can play in tackling inequalities in health is explored. All papers are submitted, accepted or published in international, peer-reviewed journals.

In the following paragraphs we give an overview of the six aims of this PhD dissertation. As not all papers can be exclusively attributed to one aim, papers are sometimes mentioned in the description of several aims. For example paper 1 contributes to both aim 1 and aim 2.

### Part I: Describing the social gap in health

***Aim 1: to explore the extent of the social gradient in the prevalence of two common conditions in childhood: head lice and dental caries***

**Paper 1** presents the findings of a cross-sectional study in which 6.169 children between 3 and 12 years old in Ghent were screened for head lice, using the wet combing technique. The study provided prevalence numbers according to the social status of the parents (measured by occupational class).

In **paper 2** the results of a second cross-sectional study are presented in which the oral health of 384 children between 24 and 35 months old in Ghent was recorded and information on several indicators of social position and on area characteristics was gathered.

### Part II: Exploring the social gap in health

***Aim 2: to gain insight in the contribution of household-based and area-based determinants on two common conditions in childhood: head lice and dental caries***

**Paper 1** looks at the independent association between individual characteristics of the child including hair characteristics, socio-economic position of the family and the prevalence of head lice.

**Paper 2** aims to determine the independent impact of household-level social determinants (number of household members, ethnicity, educational and occupational level, and income) and area characteristics, adjusting for oral health-related behaviour.

***Aim 3: to explore inequity in medical care use in Belgium***

Previous studies have provided information on inequity in medical care use across income groups, i.e. the extent to which adults in equal need for physician care have equal rates of medical utilisation. However, these analyses were based on reported health care use. In **paper 3** we present the results of a study in

which we analysed the association between social status of the patient and registered health care use, controlling for morbidity.

***Aim 4: to explore in depth the mechanism explaining inequity in medical care use***

**Paper 4** explores the breadth and scope of barriers and facilitators for medical care use in the way disadvantaged people in Belgium experience them. The results of this study contributed to the development of a comprehensive model that depicts the process of medical care use by people living in poverty. This model is described in **paper 5**.

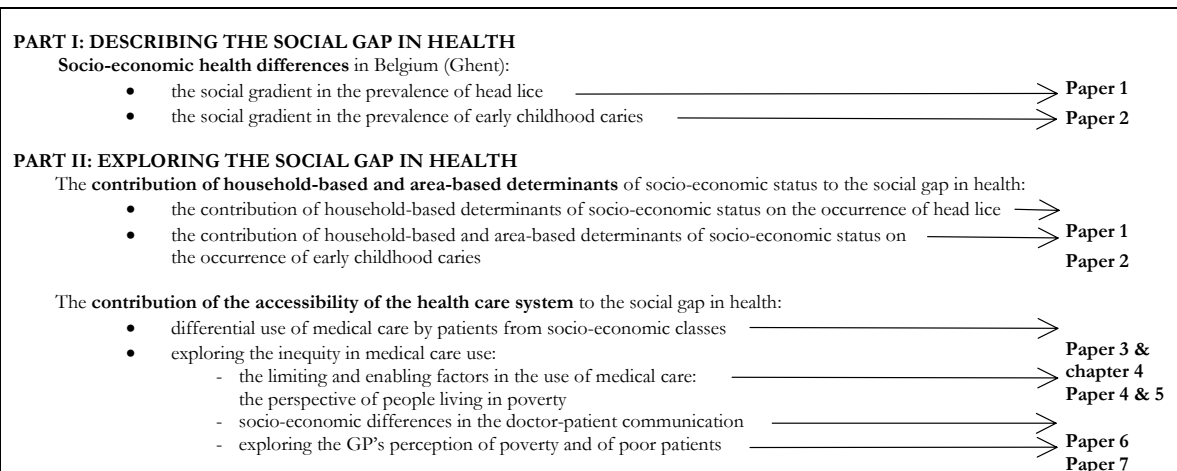
***Aim 5: to gain insight in some of the barriers identified in the exploratory study with people living in poverty: social gradient in doctor-patient communication***

**Paper 6** presents the results of a systematic literature review exploring whether the patient's social status influences doctor-patient communication.

***Aim 6: to gain insight in some of the barriers identified in the exploratory study with people living in poverty: the GP's perception of poverty and of poor patients***

In **paper 7** we present the findings of a qualitative study with GPs which aimed to explore the GPs definition of poverty, their perception of deprived patients' attitude towards health and health care, and to obtain insight into the ways GPs deal with the problem of poverty.

Underneath we give a schematic overview of the research questions and the contribution of the different papers. This can be used by the reader as a guide through the research papers presented in the following chapter.



In preparation for the study on the prevalence of head lice (paper 1) we conducted a study in which we compared the diagnostic performance of the classical scalp inspection versus the wet-combing-technique

to detect head lice. The results of this study were published in a peer-reviewed international journal. As the aim of this paper not directly relates to the aim of this PhD dissertation, we preferred to include this paper in the appendix. Two editorials were published concerning the topic of this dissertation. We included them as well in the appendix of this dissertation. Finally, the chapter we wrote for the Oxford Textbook of Primary Medical Care was included in the appendix, since it formed the basis of the introduction.



## 8 Chapter 3: Research papers

Paper 1:

Willems S, Lapeere H, Pasteels I, Naeyaert J-M, De Maeseneer J. The prevalence of head lice in schoolchildren : importance of socio-economic status and individual characteristics. *European Journal of Dermatology* 2005; 15(5): 387-92.

Paper 2:

Willems S, Vanobbergen J, Martens L, De Maeseneer J. The independent impact of household and area based social determinants on early childhood caries (ECC): a cross-sectional study in inner city children. *Family and Community Health* 2005; 28(2): 168-175.

Paper 3:

Willems S, Pasteels I, Kunst A, De Maeseneer J. Socio-economic differences in the utilisation of health care services in Belgium: linking the National Health Interview Survey and registered health care utilisation data. *Health Services Research*. Manuscript to be submitted. **AVAILABLE ON REQUEST**

Paper 4:

Willems S, De Roo L, Anthierens S, Derese A, De Maeseneer J. Understanding inequity in the use of medical care: the perspective of people living in poverty. *Health Policy*. Submitted. **AVAILABLE ON REQUEST**

Paper 5:

Willems S, De Roo L, De Maeseneer J. Towards a comprehensive model for understanding the complexity of medical care utilisation patterns by the poor and underserved. *Health Policy*. Submitted. **AVAILABLE ON REQUEST**

Paper 6:

Willems S, De Maesschalck S, Deveugele M, Derese A, De Maeseneer J. Socio-economic status of the patient and doctor-patient communication: does it make a difference? *Patient Education and Counseling*. 2005 Feb;56(2):139-46.

Paper 7:

Willems S, Swinnen W, De Maeseneer J. "Tell me about poverty": a qualitative research on the perceptions of family physicians. *Family Practice*. 2005 Apr; 22(2): 177-183.

## Socio-economic status of the patient and doctor–patient communication: does it make a difference?

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### Abstract

This systematic review, in which 12 original research papers and meta-analyses were included, explored whether patients' socio-economic status influences doctor–patient communication.

Results show that patients from lower social classes receive less positive socio-emotional utterances and a more directive and less participatory consulting style, characterised by significantly less information giving, less directions and less socio-emotional and partnership building utterances from their doctor. Doctors' communicative style is influenced by the way patients communicate: patients from higher social classes communicate more actively and show more affective expressiveness, eliciting more information from their doctor. Patients from lower social classes are often disadvantaged because of the doctor's misperception of their desire and need for information and their ability to take part in the care process.

A more effective communication could be established by both doctors and patients through doctors' awareness of the contextual communicative differences and empowering patients to express concerns and preferences.

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**Keywords:** Communication; Physician–patient relations; Social class (Mesh)

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### 1. Introduction

Health differences due to differences in socio-economical status (SES) are a matter of major concern in today's public health research. In spite of marked health improvements of the overall population and efforts to overcome health inequalities, higher morbidity and mortality rates for the socio-economically disadvantaged are still found [1–4]. Explanations for these inequalities in health are often explored but remain largely unclear [4,5]. The causes are multiple and complex and include individual factors, such as personal history (e.g. childhood SES and living conditions) and education, structural factors, such as income and housing facilities, unequal distribution of risk factors in the population and inequalities in the accessibility of health care [5–12]. An important determinant of accessibility to health care is the quality of the communication between the patient and his/her health care provider(s). Yet this factor has to our knowledge never been included in

any of the explanatory models for socio-economic health inequalities.

The communication between patient and physician has a strong influence on the patient's satisfaction and compliance [13–19,20]. When looking at the impact of components of physicians' behaviour during consultation, both verbal behaviour and non-verbal behaviour seem to correlate positively with patient satisfaction. [13–16]. The important determinants for compliance are mainly more information giving, more positive talk and empathy and an increased participatory style [13,17,18,20]. Though satisfaction and compliance are important indicators, the most important one when evaluating the effectiveness of the communication between patient and physician is the overall health outcome. In this perspective better communication (e.g. more question asking by the physician and by the patient, more information giving, shared decision making, more affective behaviour, etc.) seems to have a positive influence [19,21].

If differences in the physicians' communicative behaviour depend on the socio-economic status of the patient, this could be a new focus in tackling socio-economic inequalities in health.

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We aimed to carry out a systematic literature review to explore the following questions:

- Is the doctor–patient communication related to the socio-economic status of the patient?
- If so, which aspects of the consultation are affected?

## 2. Methodology

MEDLINE and PsycINFO (1965–2002) were searched, using the following keywords:

- MeSH: communication AND (physician–patient relations OR provider–patient relations OR physician–family relations) AND (social class OR socio-economic factors).
- Text-words: (doctor–patient communication OR physician–patient communication OR provider–patient communication) AND (social class OR socio-economic status).

This resulted in a list of 42 articles of which the references were checked for other relevant articles.

To make the comparison of results possible, articles were included when they mentioned the interaction between the SES of the patient or one of its determinants (educational level, income or occupation) as well as determinants of doctor–patient communication. Articles determining SES by other variables than education, income or occupation (e.g. race, gender, health literacy) were excluded. Articles that were not original research articles, opinion articles and reviews were excluded.

After exclusion, 12 articles were used to compare results.

Each study meeting the inclusion criteria was evaluated to determine the sample characteristics (setting, number of analysed interactions), study design and methodology, the SES and communication variables tested and the statistics used to test correlation (see Table 1).

## 3. Results

The comparison of the results of the selected studies was difficult, given the great variation in communication variables that had been tested. We considered several communication assessment approaches to cluster these variables [22,23]. Communicative behaviour can be categorised following the axis verbal/non-verbal behaviour. The verbal elements of communication can be divided into instrumental or task related behaviour (e.g. question asking, information giving, etc.) and affective or socio-emotional behaviour (counselling, positive and negative talk, etc.), reflecting the distinction between cure and care.

Yet in some of the articles the tested determinants of communication did not fit into these categories but were rather related to the concept patient-centredness (e.g. shared deci-

sion making, participatory decision making style, partnership building, etc.).

In this review the communication variables tested in the selected articles are attributed to the following categories: verbal behaviour: instrumental behaviour; verbal behaviour: affective behaviour; non-verbal behaviour; patient-centred behaviour.

### 3.1. Verbal/non-verbal behaviour

#### 3.1.1. Verbal behaviour: instrumental behaviour

Instrumental or task-related behaviour is considered as all interactions that serve the “cure” part of the consultation, e.g. giving directions, giving information, asking clarification, asking questions, counselling, etc.

Seven studies investigated the relationship between the instrumental behaviour of the physician and/or the patients, and the patients’ SES.

In a meta-analysis, Hall et al. explored the correlation between physicians’ communicative behaviour towards patients and the patient’s outcome variables by reviewing 55 articles on 41 studies carried out between 1967 and 1986. In this study the communicative behaviour of the physician was conceptualised as information giving, question asking, task and interpersonal competence, partnership building and socio-emotional behaviour. The correlation between these variables and the patient’s outcome variables (satisfaction, recall, compliance) or background variables (gender, age, social class) was assessed.

This study revealed a positive relationship between patient’s social class (measured by income, education or other, non-specified social class indices) and information giving. Patients of a higher social class received not only more overall communication but also more information (statistics used: the product-moment correlation ( $r$ ), normalised with the Fisher Z transformation, and the normal deviate Z associated with a  $P$ -value; for information giving: maximum  $r$ /study, mean Z 2.39,  $P < 0.01$ ) [24].

In an observational study, Street et al. conclude that the physicians’ information giving was positively influenced by features of the patient’s communicative style, such as question-asking, affective expressiveness and opinion-giving. Also, physicians provide varying amounts of information strictly in response to the personal and social attributes of the patients.

Concerning the communicative style, more affective expressiveness and a higher level of being opinionated is related to more information giving. This study shows that more expressiveness by the patient is strongly related to its education (partial correlation ( $pr$ ) = 0.32;  $P < 0.05$ ), as is his level of being opinionated ( $pr$  = 0.46;  $P < 0.001$ ). Also more question-asking by the patient leads to more information giving by the physicians, however this study did not find a relation between the frequency of the patients’ question asking and his/her educational background.

Table 1  
Overview of the selected articles

First author (Ref. nb.)	Setting	Method	N Patients	Variable SES	Variable communication doctor	Variable communication patient
Hall [24]	Professional health care providers	Meta-analysis	157 (mean)	Social class indices, education or income	Info giving, question asking; task and interpersonal competence; partnership building; socio-emotional behaviour (nonverbal behaviour, social talk, positive talk, negative talk);	Communicative style: affective expressiveness Parent's question asking and opinion giving Idem
Street [25]	Primary care	Audiovisual analysis	41	Education	Information giving (diagnostic, treatment, procedural)	
Street [26]	Multipurpose clinic, pediatric consultations	Audiotapes	115	Educational level	Partnership building	
Martin [27]	Primary care	Questionnaires	500	Occupation	Listening, explaining, advice giving, examination	
Fiscella [28]	Primary care	Direct observation, chart audits, patient reports	2538	Education	Time use, preventive tasks, satisfaction, attributes of primary care	
Taira [29]	Employees	Questionnaires	6549	Income	Discussion of health risk behaviours	Health risk behaviours
Pendleton [30]	Primary care	Videotaped consultations	79	Social class	Amount of information given to the patient	
Street [31]	Primary care	Videotaped consultations	41	Education	Nonverbal behaviour consistency and adaptations	
Kaplan [33]	Solo & multispecialty practices	Questionnaires	8316	Education	PDM style	
McKinstry [34]	Primary care	Structured interview, video vignettes	410	Social class indices	Shared decision making style	Idem
Roter [35]	Primary care	Audiotape RIAS; questionnaires	537	Income	Narrowly biomedical, expanded biomedical, biopsychosocial, psychosocial, consumerist pattern	
Stewart [37]	Primary care	Audiotapes	140	Educational level	Information giving; patient centredness	

When controlling for the influence of the patients' communicative style, there is also evidence revealing that physicians give more information to particular types of patients than to others, regardless of the patients' communicative behaviour: more educated patients receive more diagnostic and health information than did their counterparts ( $pr = 0.38$ ;  $P < 0.05$ ) (statistics used are partial correlations which, when squared, reflect the proportion of the dependent variable's variance that is related to a particular predictor variable independent of the other variables in the model) [25].

A second study by Street et al. compared the degree to which parents' personal and interactive characteristics accounted for variation in doctor–parent interactions during paediatric consultations.

In this study it becomes clear that more educated parents not only are more expressive and have a higher level of being opinionated but they also ask more questions ( $pr = 0.24$ ,  $P < 0.02$ ). All three of these communication aspects lead to more information and direction giving by the physician.

Further, this study gives information on the relative impact of the patients' communication style at the one hand and his/her personal and social attributes at the other hand. Compared to their behaviour, the parent's personal characteristics had less influence on the physicians' responses. The results of this study suggest that adaptations in the physicians' responses may, besides a function of patients' personal or social characteristics per se, also be the result of the patients' communicative actions [26].

In an observational study in three general practices, Martin et al. looked at how both physicians and patients perceive what happens during the consultation. In the patients' perception of the consultation most emphasis is put on the prescribing, reassuring and referring. Physicians report that emphasis is put on active listening, supporting and giving advice. Furthermore, physicians perceived they explained and listened more to patients from higher social classes than to patients from lower social classes, but gave the latter more "other help" which was not specified. They also said to examine more and to give less advice to patients from lower social classes. However, the patients did not share these perceptions. An important restriction of this study is that patients from lower social classes were underrepresented [27].

In a survey among 2538 visits in primary care in New York, Fiscella et al. conclude that for patients with lower education (high school or less) a slightly larger proportion of the consultation was spent on physical examination and nutritional counselling. Less time was spent on patient's questions, assessing their health knowledge, negotiating and counselling, and less screening tests were provided to them. One could say that less educated people are approached in a more directive way during consultation. Consequently, the authors also found that less educated patients saw their expectations less met [28].

In a patient completed mail survey among 6549 Massachusetts state employees by Taira et al., it was investigated

whether the patients' income level had an influence on the physicians' discussion of health risk behaviours. Concerning patients at risk, physicians tended to discuss diet and exercise more with high income patients and smoking more with low income patients [18]. The overall discussion of health risk behaviour (not only with patients with a high risk) was not investigated on any differences between social classes.

Finally, Pendleton et al. considered four types of information giving depending on patients' social class. There was a significant ( $F$ -ratio 4.04;  $P < 0.025$ ) difference in voluntary explanations given to patients from different social classes, independent of the different types of problems; higher SES patients receive significantly more explanations even when the explanation was not explicitly requested by the patient [30].

### 3.1.2. Verbal behaviour: affective behaviour

Affective behaviour such as social talk, agreement, paraphrasing, verbal attention, showing concern, reassurance and disagreement, was investigated in a limited number of studies.

The meta-analysis by Hall et al. gives information on social talk and on positive and negative talk. Although a link between these aspects of affective behaviour and the patients' satisfaction and compliance can be identified, none of these determinants were found to be related to any determinant of the patients' social class [24].

The studies of Street et al. (supra) concluded that doctors provided more comments of reassurance, support and empathy to parents who were more affectively expressive (more specifically who expressed more negative affect). As patients with a higher educational level are more affectively expressive than their counterparts, it can be assumed that physicians show more affective behaviour towards these patients [25,26].

### 3.1.3. Non-verbal behaviour

Non-verbal behaviour is one of the least investigated topics of doctor–patient communication, especially when looking at it's interaction with determinants of social class.

The effect of non-verbal behaviour is mentioned in two of the selected articles [13,30].

The meta-analysis by Hall et al. could not find any research that was done on the association between the physicians' non-verbal behaviour and the patients' social class [24].

The same year of the Hall review, Street and Buller examined the non-verbal behaviour level and adaptations in 41 primary care doctor–patient interactions and the relationship with patients' characteristics such as age, sex and educational level. No differences were found in the level of non-verbal communication towards patients of different educational backgrounds. However, when talking to higher educated patients the physicians reciprocated their body orientations more than they did with lower educated patients ( $P < 0.001$ ). Finally, this article refers to specific difficulties

in coding non-verbal behaviour, which is much more complex than categorising the verbal interactions [31].

### 3.2. Patient-centredness

Patient centredness is a concept that includes many diverse variables of communicative behaviour. Five dimensions can be identified: using the bio-psycho-social perspective; approaching the patient as a whole person; sharing power and responsibility; building of a therapeutic alliance and considering the physician as a person, acknowledging the influence of its personal qualities [32]. In the selected articles determinants such as shared-decision making, partnership building utterances, participatory decision making style and interpersonal competence occurred, most of them investigating the relationship with the SES of the patient.

In a cross-sectional study on a sample of 8316 patients from both primary care and specialist care, Kaplan et al. identified patients' characteristics associated with decreased mutual decision making between physicians and patients. The results indicate that patients with a high school education or less were significantly less involved in treatment decisions, less given a sense of control over treatment decisions and less asked to take responsibility for care than patients with post-graduate college education [33].

Also McKinstry observed the patients' preference for shared decision making and the determinants influencing this preference. Pairs of video vignettes of acted consultations on five common problems were used, one in a shared approach style and one in a directive approach style. These video's were subjected to discussion by groups of patients. Patients' preference for one of the two approaches was significantly associated with their social class, age, the scenario and their perception of the consultation style of their own physician being shared or directive. A lower educational level (leaving school at an age less than 17) was associated with a lower preference for the shared approach, although it was not found to be an independent predictor. Also a lower social class predicted a lower preference for shared decision making style (odds ratio, 0.35 (0.13–0.94) for the highest social class and 1.05 (0.54–2.02) for the lowest social class). Prudence in generalising these findings is necessary however, since specific minorities within each group had opposite views than the rest (e.g. lower class smokers preferred a shared approach when talking about lifestyle problems) [34].

Roter et al. described five communication patterns (narrowly biomedical, expanded biomedical, bio-psycho-social, psycho-social and consumerist patterns) and their relationship with several patient characteristics, based on an analysis of 537 primary care doctor-patient interactions. Patients' age and income seem to be significantly related to these patterns. Patients approached in the narrowly biomedical pattern (characterised by low amount of talk about psychosocial issues, high percentage of biomedical talk and a high percentage of question asking by the physician; low

patient communication control; physician directed, guided) were more likely to be poorer ( $P < 0.02$ ) than patients approached in other patterns [35].

As presented above, the amount of information given to patients is related to patients' characteristics and to the patients' communicative style. Hereby, the patients' communicative style is not only influenced by his/her educational level but also by the level of partnership building of the physician [25,26]. In the observational study mentioned above by Street et al. it appeared that higher educated patients received more partnership building utterances ( $pr = 0.50$ ;  $P < 0.01$ ) [25].

## 4. Discussion and conclusions

### 4.1. Conclusions

In this literature review we found that patients from lower social classes receive significantly less positive socio-emotional utterances, a more directive and a less participatory consulting style characterised by e.g. less involvement in treatment decisions; a higher percentage of biomedical talk and physicians' question asking; lower patient control over communication; less diagnostic and treatment information, more physical examination.

These differences in the doctors' communicative style can—partially—be explained by differences in patients' communicative style. Also a direct impact of the patients' SES on the doctors' communication can be found.

The patients' communicative behaviour is directly influenced by his/her personal and social attributes, such as educational level, age, sex, anxiety, etc. [25,26]. More educated patients communicate more actively (they ask more questions, are more opinionated) and show more affective expressiveness, eliciting more information from their physician. Because patients with a higher education experience a smaller cultural distance (due to a similar background) between them and the doctor, they might have fewer difficulties when interacting with the physician [25].

Patients from a lower social class and doctors often find themselves in a vicious circle. These patients' communication and actions (e.g. less question asking, less opinion giving, less affective expressiveness, less preference for decision making) elicit a less involving behaviour from the doctor, with less partnership building utterances, which discourages the patient to adopt a more active communication style (see Fig. 1).

Doctors behave differently during consultations with patients from lower social classes. They are less informative with less educated and lower income patients, possibly because they inaccurately assume that these patients are not particularly interested in learning about their health or don't understand this information [25,36]. Also they tend to vary the amount of showing affect, involving patients in treatment decisions and express concern by their perception of



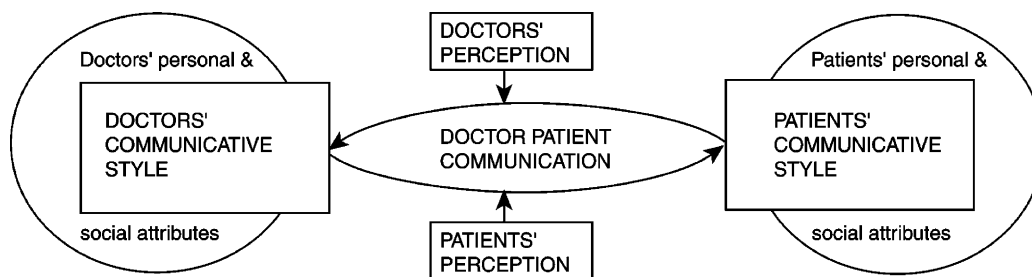


Fig. 1.

the patients' interest in or ability to participate in care. Even though physicians often ground their behaviour on these perceptions, this is not always in accordance with reality.

In conclusion, patients with a lower educational level are doubly disadvantaged: first of all because of their more passive communicative style and secondly because the physicians' misperception of their desire and need for information [25].

Finally, although not immediately related to the patients' social class, we mention the large inter-individual variation in the physicians' degree to which he provides information, issues directives, exhibits positive socio-emotional behaviour and engages in partnership-building. The variability among doctor–patient interactions in part reflects also these differences in the physicians' communicative routines for conducting a consultation [26].

#### 4.2. Limitations of the study

An important limitation the researchers were confronted with when writing this review, is the limited number of studies on this specific topic. Even more limited is the number of articles investigating the link between the patients' SES and the affective and non-verbal behaviour of the physician. Yet previous research has shown the importance of these aspects of communication by proving the influence on e.g. patients' satisfaction.

The limited number of studies does not allow us to draw conclusions concerning non-verbal and affective behaviour. Research on this topic is needed.

Besides this it is very difficult to compare the results of the existing studies, or even to make a summary due to the great diversity of measurements and frameworks organising these measurements in the different studies.

The main variables used to measure the patients' SES in the selected articles were the patients' educational level, his/her income and his/her occupational status [38,39]. Educational level is used as a measure because differences in education correspond with different access to information and with different levels of benefiting from new knowledge. Income is another possible parameter for social class as it creates differences in access to scarce material goods. The occupational status reflects both these aspects and adds benefits that can accrue from certain jobs, like prestige, privi-

leges, social and technical skills and power. An alternative to determine SES is to use proxy-measures e.g. the insurance status, house tenure, car ownership, sociodemographic measures (race, etc.). Articles using proxy-variables as the only measure for SES were excluded. However, some of the selected articles used these variables in combination with educational level, income or occupational class.

In the selected articles many different communication classification systems were used to describe the communicative behaviour of the physician. The variables used in these classifications are not always comparable, making the creation of a clear overview difficult. We were able to categorise most of the used communicative variables following the axis verbal/non-verbal behaviour. The determinants of communication that did not fit into the categories of this axis, were related to patient centredness.

In order to improve the comparability of future research, a uniform definition and classification of communication variables is indispensable.

#### 4.3. Practice implications

Our systematic review of the literature has revealed a vicious circle between patients and doctors in their communication.

Physicians behave differently with patients from different SES and patients communicate differently with their doctor depending on their SES. These differences add to the already existing boundaries to health care utilisation by patients from lower SES.

We suggest a four-way solution: broader and deeper research on social differences in the doctor–patient communication, promoting physicians' awareness about their communicative style, developing teaching methods on inequalities in communication, and encouraging research on and implications of patient empowerment methods.

The finding that the physician's communicative behaviour is related to the communicative style of the patient and to his/her personal or social characteristics may have important implications for the daily practice of the physician.

Physicians need to become aware of the existing differences in giving information to and involving patients from lower social classes in the consultation, as well as of the underlying causes [40]. They should encourage patients to

discuss their concerns and to ask questions, and they should listen actively. Communication skills and attitudes training can be an important tool to improve these defaults: the effects of such training have been proven and can persist over time [41]. Communication training is very often influenced by middle or upper social class style, since this is the background of the majority of the students and teachers. Efforts should be done to develop teaching methods encouraging and focussing on communicating with patients from lower social classes.

Patients have a certain power to control communication during the consultation and to influence the physicians' communicative behaviour. However, patients from lower social classes seem to exercise this control less than patients from higher educated groups. Therefore these patients should be empowered to express their concerns and preferences [25,26,36]. It has been shown that interventions to increase the participation of patients with low education obtain a good response and lead to measurable and clinically important improvements in health outcomes [21].

These efforts should be embedded in a broader approach to tackle social inequalities and poverty [6].

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# The GP's perception of poverty: a qualitative study

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Willems SJ, Swinnen W and De Maeseneer JM. The GP's perception of poverty: a qualitative study. *Family Practice* 2005; **22**: 177–183.

**Background.** Health differences between people from lower and higher social classes increase. The accessibility of the health care system is one of the multiple and complex causes. The Physician's perceptions, beliefs and attitudes towards the patient are in this context important determinants.

**Objectives.** To explore the general practitioners' definition of poverty and their perception of the deprived patients' attitude towards health and health care, to get insight into the ways general practitioners deal with the problem of poverty and to present the proposals general practitioners make to improve health care for the deprived.

**Method.** The study involved qualitative methodology using 21 semi-structured interviews. The interviews were recorded and transcribed verbatim. The transcripts were coded using Framework Analysis techniques. Interviews were undertaken with general practitioners in primary care, working in a deprived area in the city of Ghent.

**Results.** In the definition of poverty, three concepts can be identified: socioeconomic aspects, psychological and individual characteristics, and socio-cultural concepts. General practitioners adopt different types of approaches to deal with deprived patients in practice: adaptation of the doctor-patient communication, lowering of the financial threshold, referral to specialists and other health care professionals.

**Conclusion.** Including the issue of poverty and poverty in the curriculum of the medical students and in the in-service training for practicing doctors could have a positive impact on their attitude towards this patient group. Further research is needed into the barriers in the accessibility of the health care system for the deprived, exploring qualitatively and quantitatively the experiences and the living conditions of deprived patients and the perceptions of health care providers.

**Keywords.** General practitioners, Poverty, Physician-Patient relations, Accessibility of Health Services

## Introduction

Despite marked health improvements in the overall population, evidence of systematic differences in health between people from lower and higher social classes has been accumulating rapidly in recent years. The explanations for this are frequently explored but remain largely unclear.<sup>1,2</sup> These multiple and complex causes include individual factors such as personal history (e.g. childhood socio-economic status and living conditions) and education, structural factors such as income, housing facilities, the unequal distribution of risk factors in the

population and barriers to the accessibility of the healthcare system, all of which lead to differences in usage of healthcare.<sup>1–8</sup>

Numerous studies have identified different barriers to the process of obtaining adequate and timely medical care, particularly for patients from disadvantaged groups. In the categorization of these barriers, a distinction can be made between those on the user's side and those on the provider's side. On the user's side, there is documentary evidence of socio-demographic barriers, psychological barriers, barriers related to the patient's knowledge, attitude towards illness and towards the healthcare system, and barriers created by the characteristics of the patient's social and environmental background. However, one explanation for the inequalities in healthcare usage that is considered to be much more significant and which receives considerably more attention from those concerned with improving the health of the poor concerns the barriers on the

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provider's side.<sup>9</sup> That is to say, the barriers related to the characteristics of the healthcare system and those related to the personal attributes of the healthcare providers. In this context, the concept of attributes refers to the GP's perceptions and attitudes, such as his/her conceptualization of poverty and his/her attitude towards deprived patients. It is reasonable to assume that these attributes have an impact on the doctor's consultation style and the relationship with the patient and can act as a barrier for deprived patients.

Poverty studies distinguish three dimensions in the conceptualization of poverty: economic well-being, social exclusion and capability. Economic well-being stems from the issue of whether someone has sufficient income to acquire a basic level of consumption or human welfare. Secondly, the social isolation of the poor from the rest of society can be perceived as a cause of poverty. Finally, poverty can be regarded as a function of the lack of the individual skills, such as education or health, needed to attain a basic level of human well-being.<sup>10</sup>

Little is known about how GPs define poverty, their attitudes towards deprived patients and their perception of the attitude of those patients towards health and the healthcare system. The aim of this study is to explore these perceptions and attitudes, thereby obtaining an insight into the ways GPs deal with the problem of poverty and their proposals for improving healthcare for the poor.

## Methods

### *Subjects and setting*

The study took place in the city of Ghent (population 200 000) in Belgium. In view of the exploratory hypothesis-generating nature of this research, a qualitative method based on semi-structured interviews was used. Qualitative research enables us to access an area that does not lend itself to quantitative research and has the added advantage of uncovering issues or concerns that had not been anticipated or considered by the researcher, a restriction implicit in the use of closed-ended questions.<sup>11–13</sup> The choice of semi-structured face-to-face interviews was made based on prior negative experiences of gathering 6 to 8 GPs at one time. After the interviews, some of the respondents reported that they had appreciated this technique on account of the somewhat sensitive nature of the subject. We used a purposive sampling strategy to select 25 participants, aiming for maximum variation in the type of practice (single-handed practices, practices with a patient list and capitation, community health centres with a patient list and without capitation), the GP's district of work (the different deprived areas of Ghent), his/her number of years of experience and gender. The deprived areas were identified according to the "Atlas of poverty", which uses the following indices: the concentration of migrants,

the number of inhabitants with low incomes, long-term unemployed, receipt of financial support from the government and the number of candidates on the waiting list for social housing.<sup>14</sup> All 25 GPs (8 female and 17 male, making up 33% of the doctors working in the deprived areas of Ghent) were contacted by phone and 21 agreed to participate in the study (84%).

### *Interviews*

Data was collected using a loose structured interview guide consisting of open-ended questions. The questions defined the area to be explored and formed the basis from which the interviewer or the interviewee could diverge in order to pursue an idea in more detail.<sup>13</sup> The advantage of the use of an interview guide is that it increases the comprehensiveness of the data and makes the data collection process more systematic for each respondent. Furthermore, logical gaps in data can be anticipated and closed. It also keeps the interviews fairly conversational and situational.<sup>15</sup> The interview guide used in this study was developed from literature covering the topic of questioning one's attitude and beliefs towards a certain topic and through discussions with experts in qualitative research.<sup>14</sup> One pilot interview was conducted to test whether the questions in the interview guide met the basic principles of good questions for qualitative research of open-endedness, neutrality, sensitivity and clarity to the interviewee.<sup>15</sup> Only a few minor textual changes were subsequently made to the interview guide, which also remained stable during the course of the research interviews.

The interview guide consisted of the following core questions defining the area to be covered:

How would you define the concept of 'poverty'?  
How do you perceive the attitude of deprived people towards health and illness?

How do you deal with deprived patients?  
What would you suggest to improve healthcare for deprived patients?

WS, a GP and research fellow at the Department of General Practice and Primary Healthcare, conducted the interviews. He adopted a non-directive approach to encourage the physicians to develop and elaborate their own perspectives. Interviews lasted from 40 to 90 minutes and were conducted in the GPs' surgeries. They were tape-recorded and fully transcribed.

### *Analysis*

The individual transcripts were analysed using Framework Analysis techniques. This approach employs sifting, charting and sorting the material in a systematic manner in order to allow key issues and themes to emerge. *A priori* issues are integrated into the data analysis.<sup>16</sup> The interview transcripts were read repeatedly

and were first coded independently by two researchers (WS and SW) to capture the range and the diversity of the GPs' perceptions and to compare them across transcripts. Recurrent themes reflect a shared understanding among GPs of the phenomena under investigation. Furthermore, ideas on emerging themes were compared and modified until agreement was reached. This was a dynamic process, with each transcript informing both the collection of further data and their subsequent analysis. The entire process was supervised by a senior researcher (JDM). The criteria of credibility, transferability, dependability and confirmability outlined by Lincon and Guba (1999) were adopted as tests of thoroughness and trustworthiness.<sup>16</sup> As is usual in qualitative research, the data is presented in the form of general concepts illustrated with quotations.

## Results

All respondents were Caucasian; 14 (70%) were doctors working in a single-handed practice; 1 worked in a practice with a patient list and capitation and 2 worked in a community health centre; for 3 of the GPs, the type of practice is not known. Their workload varies between 5–15 hours/day and consultation times vary between 10–20 minutes per patient. The average time in practice was 15.7 years (range: 1–36 years).

### *GPs' conceptual model for poverty: causes and effects (Box 1)*

In the conceptual model for poverty described by GPs, socio-economic aspects, patients' psychological and individual characteristics, and socio-cultural aspects can be identified. Almost all respondents refer to socio-economic aspects (Box 1) as being significant factors in poverty. Specifically, the physicians refer to low income, poor education, unemployment and bad housing as significant factors.

Patients' psychological and individual characteristics (e.g. attitudes and coping skills) (Box 1) are also considered important in the definition of poverty, although the stipulation of this aspect is less homogeneous. The most commonly cited feature in this context is lack of ambition and motivation to improve the situation.

“They don't want to change their situation . . .; they are used to it. They no longer have the courage to change it.”

Furthermore, a lack of the skills needed to manage their budget, limited intellectual capacity and a lack of social and relational skills are mentioned. Finally, the GPs identify limited communication skills, addiction, laziness, fear of what might happen in the future and lower health status as individual determining factors in poverty.

The definition of poverty also identifies socio-cultural aspects (Box 1), the most important of which is the

### Box 1 *GPs' conceptual model for poverty: causes and effects*

#### *Socio-economic aspects*

Low income  
Low education  
Unemployment  
Bad housing

#### *Psychological aspects and patient's individual characteristics*

Lack of ambition and motivation to improve the situation  
Lack of skills to manage the household budget  
Limited intellectual capacity  
Lack of social and relational skills  
Limited communication skills  
Addiction-related problems  
Laziness

Fear of what might happen in the future  
Lower health status

#### *Socio-cultural aspects*

Negative influence of the social group  
Social isolation  
Passed on from one generation to the following generation: impossible to break this vicious circle  
Consumerism (overspending)  
Large family sizes  
Impact of society: inadequate reaction to poverty

negative influence of the social group, or more specifically, the negative influence of parents on their children. The social isolation of the deprived patient is also a significant factor. On this subject, some respondents refer to the fact that poverty is structurally transmitted from one generation to another and consider it almost impossible to break this vicious circle.

“If the father is a workman, the son is a workman, etc. Children who want to study have to be very intelligent and need to have a very strong personality. They have to distance themselves from their family. Otherwise it is not possible.”

A minority of the GPs refer to the role of society and inadequate reaction to poverty.

“If there were stricter laws on payment on credit, the problems caused by buying large amounts of goods on account would not be possible anymore.”

Finally, consumerism (overspending) and large family sizes are mentioned as factors behind poverty.

### *GPs' perceptions about deprived persons' views of the health services (Box 2)*

On the one hand, GPs sometimes have a rather negative idea of the patients' attitude, referring to the limited

**Box 2** *GPs' perceptions about deprived persons' views of the health services*

Limited knowledge and insight in own health and illness

Limited interest and motivation to change health-related behaviour

Inadequate use of medical services

"Floating patient group" possibly related to the availability of the GP and the nature and content of the healthcare provided

Short term symptom relief

Doctor-oriented locus of control

Trying to identify the underlying mechanisms for the patient's risk-related behaviour, inadequate use of healthcare . . .

Penurious living conditions leading to high levels of psycho-social stress

Fear of having their children taken away or to be considered a bad parent

Lack of help from social network

knowledge and insight of deprived patients into health and illness and their limited interest and motivation to change their health-related behaviour.

"They are not interested in their health. They don't see the advantage of, for example, healthy food."

GPs also point out the inadequate use of medical services by deprived patients, such as use of the emergency services for primary healthcare problems. In relation to preventive care for the deprived, the GPs report lower usage, partly because of financial restrictions but also because of limited knowledge, the short-term outlook of patients and their lack of motivation and "stability".

"People from this patient group are more focused on the present. They come to the practice when they have an acute problem, but you need a lot of persuasive qualities to make them come for the monitoring of chronic conditions or for prevention."

Deprived patients are sometimes considered as the more "floating patient group", i.e. not consulting the same doctor each time. This could be related to the availability of the GP and the nature and the content of the healthcare provided (does the doctor meet the patient's expectations?). On this subject, the respondents refer to this patient group as very focused on getting sick-leave certification and on short-term symptom relief. The respondents have the feeling that people living in poverty expect the doctor to take all the responsibility for their health (doctor-oriented locus of control).

"They never say, 'I'll solve that problem'. They say, 'You must solve the problem'."

On the other hand, the respondents also show an understanding and empathy towards the predicaments faced by the poor. They try to identify the underlying

**Box 3** *GPs' strategies for dealing with deprived patients in primary care*

*Change in modes of communication:*

Different language use (easier wording, etc.)

Trying to get an insight into and show empathy for the living conditions of the patient

*Cost reduction:*

Free medication samples

Prescribing the cheapest product

Critically analysing and adjusting the medication scheme

Reducing or waiving fee

Asking for one fee instead of two when examining two persons from the same family

Postponing payment

*Taking on increased responsibility:*

Managing the patient's problem as long as possible at primary healthcare level

More co-ordinated referrals to specialists

Requesting help from other medical or social caregivers

mechanisms for the patient's risk-related behaviour or his/her 'inadequate' use of healthcare services, such as penurious living conditions leading to high levels of psycho-social stress, the lack of a social network to appeal to when in the need of help, and the fear of being considered a bad parent or of having their children taken away from them by social services.

"They rarely postpone healthcare for their children; they really want the best care for their children. I think they consider them as one of the few good things they have left and they don't want to be considered as a bad parent."

*GPs' strategies for dealing with deprived patients in primary care (Box 3)*

Most of the GPs feel they play an important role in the patient's life, monitoring their physical, psychological and social health and well-being and enjoying their trust. They generally have a positive attitude towards working with deprived patients and regard contact with them as warm, spontaneous and rewarding. This results in attempts to lower the primary healthcare threshold for deprived patients.

A first approach concerns doctor-patient communication. Some mention that they speak differently (using simpler words, etc.), while others state that they try to get an insight into and show empathy for the living conditions of the patient.

"When someone is in the middle of a difficult period in his life and he comes to see me about bronchitis, I don't tell him to quit smoking. Smoking is the only



thing he has left and it reduces his stress in a difficult period. I tell him that it is a step in the right direction if he can cut down his smoking by half.”

A second area of intervention concerns the financial threshold. Most doctors regard the cost of medication as an important barrier. They try to reduce these costs by giving the patient free medication samples, prescribing the cheapest product or by critically analysing and adjusting the patient’s medication scheme. As far as payment for the consultation is concerned, the GPs try to reduce the burden for the patient by lowering or waiving the fee, charging for one instead of two when examining two persons from the same family, or by postponing the payment.

“I also ask my colleagues to reduce their fees, and they generally do.”

A third course of action concerns referral to specialists and other healthcare professionals. On the one hand, the respondents report that patients’ financial problems don’t necessarily delay referral to a specialist. However, they do try to manage the patient’s problem themselves for as long as possible at primary healthcare level.

A patient’s financial status has particular bearing upon the extent of the “co-ordination of the referral to a specialist”. For deprived patients, the GP regularly makes the appointment with the specialist, helps set treatment priorities in the light of the patient’s priorities in daily life, and refers the patient to a specialist who does not demand large out-of-pocket payments. The GP often checks the feasibility of the medical strategy proposed by the specialist, taking into account the specific living conditions of the patient.

The GPs also report that they ask for the help of other medical or social caregivers to monitor the patient’s situation and to advise the patient in administrative and financial matters. GPs participating in a multidisciplinary team consider this to be a very effective way of managing the patient’s care, although there is some concern about the efficiency of multidisciplinary meetings.

However, some doctors have a rather negative perception due to the poor outcome, demanding attitude and medical shopping practised by the deprived, resulting in reduced motivation to expend energy on this patient group.

“I have the feeling that when one works with the deprived, one gets into a vicious circle: I have the feeling that I work a lot but don’t get any results and that takes away my motivation to expend more energy in this area.”

#### *GPs’ suggestions for improvements to the healthcare system (Box 4)*

The GPs offer suggestions for improving the accessibility of primary healthcare for the deprived as well as suggestions at community level. Concerning the

#### *Box 4 GPs’ suggestions for improvements to the healthcare system*

Cost-sharing  
Education and training of caregivers  
Teamwork  
Transparency in the social services available  
Prevention  
Patient education

accessibility of primary healthcare, the GPs suggest the implementation of an income-related cost-share, especially for medication and the consultation fee. The GPs also advocate specialised training in (communication) skills and knowledge in order to tailor the content and the style of the consultation to the needs of the deprived.

“We should be better informed, as doctors. There was a lack of information in my training on how to work with those people. We should talk more with people who work daily with them and know them better.”

Some physicians suggest improving the accessibility of the healthcare system by creating more multidisciplinary teams. They also want the social services available for the deprived to be more transparent.

“There is an enormous range of social services for the deprived. Sometimes, I don’t know which centre to contact for which problem.”

Another suggestion is to stimulate patient education and prevention.

“It is very important to put energy into prevention. Primary prevention, secondary prevention, . . . it’s very important to make them realise that they should live healthier lifestyles . . . . It should be someone from their peer group who tells them that.”

At community level, the GPs emphasize the important role of schools and teachers. Moreover, they point to the need to improve the working conditions of the less educated and to ‘supervise’ the unemployed when giving them unemployment benefits. They also feel that community projects focusing on restoring social networks and improving the social skills, communication skills and coping skills of the deprived should be encouraged.

“I think we should have more social contact in the neighbourhood. In this respect, the creation of community centres is very positive. And there should be more benches in the neighbourhood so that people can sit together and have a talk.”

Furthermore, the GPs refer to the credit agencies and the poor regulation of these institutions, having observed

that credit and over-spending can be a significant factor in the poverty of the patient.

## Discussion

All of the GPs interviewed for this project report being confronted with the problem of accessibility of primary healthcare for the deprived in their practice and show a varying level of commitment towards these patients.

In their definition of poverty, the doctors interviewed mention socio-economic aspects, psychological and personality characteristics and socio-cultural aspects as being important. This conceptualization corresponds relatively well with the three dimensions of poverty defined in the literature on this subject, namely economic well-being, capability and social exclusion.<sup>10</sup> However, the respondents in this study seem to place greater emphasis on personality characteristics than the literature. Nevertheless, we can conclude that the doctors are mostly aware of the broader social and structural context of poverty, facilitating a more comprehensive approach to the problem.

Concerning the way GPs perceive the attitude of deprived people towards health and illness, evidence of both paternalism and empathy was found. Some doctors adopt a 'blaming the victim attitude', but others take a more emancipatory viewpoint, respecting the autonomy of the patient and stressing the importance of 'empowerment'. When looking at how the GPs deal with deprived patients, we can conclude that the GPs' perceptions often lead to altruistic behaviour, as the interviewed physicians show a high level of creativity and commitment in the search for individual solutions. Three types of actions aimed at reducing the barriers can be identified: action concerning communication, action in respect of the financial burden and action regarding referral to specialists and other caregivers, with some considering multidisciplinary teams to be a very useful tool. However, negative perceptions can sometimes lead to more negative consequences such as doctors lowering their expectations of deprived patients, a perceived lack of results leading to reduced motivation to invest energy, etc.

When asking for suggestions for improving primary healthcare for the deprived, the GPs refer to actions to improve financial accessibility and suggest solutions at community level. Finally, the GPs refer to the structural aspects of poverty such as the need for suitable employment opportunities and improved regulation of credit agencies.

This study is the first on this topic and the results provide a new and valuable insight in this research area. No similar study investigating the physician's definition of poverty and his/her beliefs and attitudes concerning deprived patients was found in the literature. The extent to which the GP acts as a barrier to healthcare for

the deprived may have been overlooked in the existing research because most previous work has been quantitative in nature, whereas hypothesis-generating qualitative methods are perhaps more appropriate for this area of research.<sup>9</sup>

Care should be taken in when interpreting the results of this study, as the interviews with the GPs preclude the possibility of making definitive statements about the nature of the relationship between doctors and deprived patients, since consultations were not directly observed. However, despite the potential for discrepancies between reported attitudes and actual behaviour, it does increasingly appear that measurements of prejudicial attitudes correlate well with measurements of behaviour in a wide variety of situations, suggesting that doctors' expressed attitudes may be reflected in their actions.<sup>9</sup>

This study has several limitations. Although interviews are an effective way of identifying and exploring perceptions, results can be biased and may not represent all doctors' perceptions and attitudes. For example, the fact that the interviewer is also a fellow doctor could have influenced the answers of the respondents. The challenge facing the interviewer was to obtain sufficient distance from the topic being investigated and to adopt an open attitude. This was achieved by collaborating with a social scientist to analyse the data.<sup>18</sup> The use of a semi-structured interview guide also has some weaknesses, as important and salient topics may be inadvertently omitted. Interviewer flexibility in sequencing and wording can result in substantially different responses, thereby reducing the comparability of responses.<sup>15</sup> Where the number of respondents is concerned, we can conclude that although the sample size of 21 GPs was set before starting the interviewing process and could therefore have limited the scope of the analysis, saturation was almost reached. That is to say, practically no new aspects were found. One further limitation is that all the doctors work in a deprived area of one Belgian city (Ghent), whereas interviewing GPs working in more affluent areas could possibly have added interesting findings to the results. Specific features of the Belgian healthcare system, such as direct access to GPs and specialists at any time for any reason, fee-for-service with 33% cost-share by the patients and the fact that the majority of the doctors work in single-handed practices, could have influenced the answers of the respondents. However, this impact could be assumed to be rather small, due to the universal nature of the concepts researched in this study, and is limited to topics concerning the financial threshold. Finally, it would be interesting to integrate the results of this study into a multi-method approach where quantitative methods are also used.<sup>19</sup>

The findings of this study may contribute to the underpinning of medical student undergraduate training and in-service training, the planning of accessible healthcare services for all patients and the strengthening

of social cohesion in the community. We found that although the doctors are aware of the broader social and structural context of poverty, they sometimes have a rather negative image of the patient's attitude towards health and illness and act within a rather 'paternalistic' framework. Previous research showed that if doctors fail to provide a positive, patient-centred approach, including aspects such as approaching the patient as a whole person and trying to find common ground, patients will be less satisfied, less enabled, and may have greater symptom burdens and higher rates of referral.<sup>20</sup>

Including the issue of poverty in the medical student curriculum and in-service training for practicing doctors could have a positive impact on their attitude towards this patient group. The growing importance of communication skills training in many medical school curricula should also provide opportunities to challenge stereotypes, enabling each student to reflect on their consulting styles and to actively consider behaviour that encourages patient participation rather than medical paternalism.<sup>9,21</sup>

With regard to the planning of accessible healthcare services, further research is needed into the barriers to the accessibility of the healthcare system for the deprived. As part of this, it is important not only to quantitatively analyse variables such as consumption patterns and out-of-pocket payments but also to qualitatively explore the experiences and living conditions of deprived patients and the perception of healthcare providers. This bi-axial approach could contribute to the development of a healthcare system that meets the expectations of the target group. The short-term perspective of the target group and the long-term perspective of the providers need to coincide.

Finally, the fundamental solution for reducing socioeconomic inequalities in health is to tackle poverty and to pursue equity in income, education and social participation. Community projects that focus on the restoration and development of social networks and social cohesion and on the improvement of the social, communication and coping skills of the deprived, should be encouraged.<sup>22</sup> Multidisciplinary primary healthcare teams can play an important role in these projects because, very often, they are the only link left between the patient and society.

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## Declaration

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Ethical approval: The study has been subject to ethical review by the Ethics Committee of the Ghent University Hospital (ref: 2004/261).

Conflicts of interest: none.

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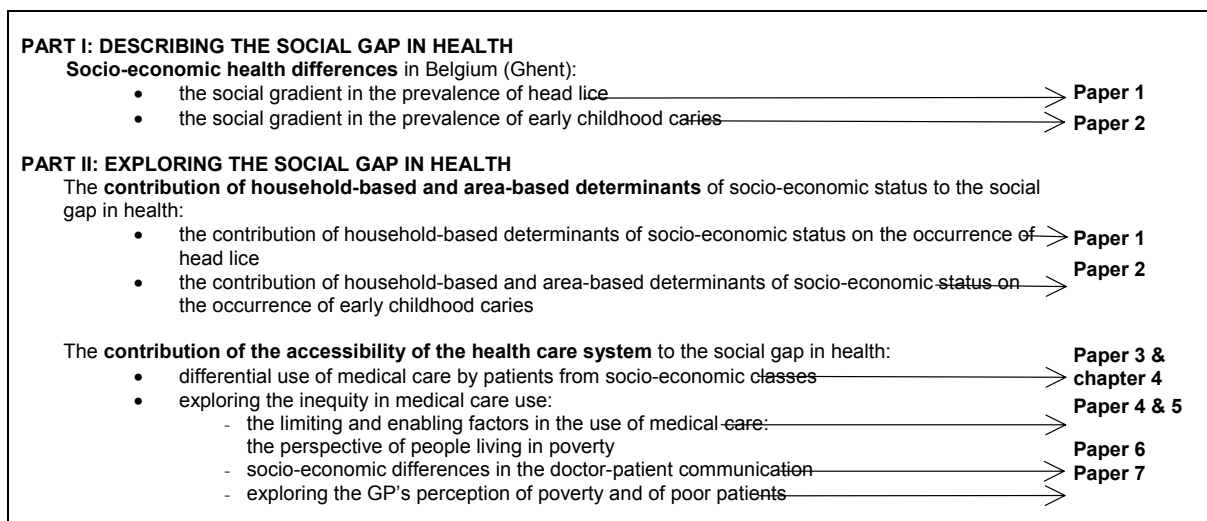
## Chapter 4: Conclusion: summary of the results, research and action agenda

In this chapter we will present a summary of what the studies we performed contributed to the scientific knowledge on socio-economic inequalities in health. In addition, we will formulate some suggestions for further research. Finally, we will focus on the potential societal impact of this research and formulate an agenda for action in order to reduce socio-economic inequalities in health.

### 4.1 Summary of the results

The aim of this PhD dissertation was to obtain better insight in the extent and the underlying mechanisms of socio-economic health differences in Belgium. Hereto, we described six studies: two quantitative cross-sectional studies focusing on prevalence rates of respectively head lice and early childhood caries; a quantitative analysis on a dataset created by linking the National Health Interview Survey 1997 and registered medical care use data; two qualitative studies, one with people living in poverty and one with GPs; and one systematic literature review on doctor-patient communication. Additionally, two editorials exploring the role of GPs in tackling inequalities in health were published. In figure 1 the contribution of the different papers to the research questions of this dissertation is presented.

Figure 1: Overview of the research questions and the contribution of the papers



### **The extent of the socio-economic inequalities in the prevalence of two common conditions in childhood: head lice and early childhood caries (ECC)**

Both for head lice as for ECC, children from lower social classes are worse off than children from higher social classes.

Head lice were found in 5.2% of the children from families with the highest occupational level (professionals such as managers and doctors) and in 17.6% of the children from families with the lowest occupational level (unemployed) ( $p < 0.001$ ). Social status of the family also showed to be significantly associated with treatment failure: 50% of the children from families with the lowest occupational level, positive at baseline screening, still had head lice fourteen days after being given treatment advice, compared to 23.5% of the children from families with the highest occupational levels. **(paper 1)**

The early presence of the social gap was also demonstrated for dental caries: 7.4% of the children from families with the highest occupational level had ECC compared to 29.6% of the children from families with the lowest occupational level. Similar results were found when other indices for social position were used. **(paper 2)**

Numbers on the importance of the social gap in childhood conditions in Belgium are rare. These studies were unique because they were able to collect both registered morbidity and social status of the family and so to demonstrate the existence of socio-economic differences in the health of young children.

Concerning head lice in the city of Ghent, only a small study previously measured the prevalence of head lice in kinder gardens and primary schools in Ghent; however no information on social status was available.[1] The association between head lice and social position has been investigated in other countries, however, in most surveys only bivariate analyses has been used. In our study we reported the independent impact of social position on the prevalence of head lice (see further).

The largest study in Belgium focusing on the oral health of children is the “Signal-Tandmobiel®”. [2] This longitudinal study included 4.351 children in the first year of primary school and followed them for 6 years. In this study also data on social position of the child’s family was collected.[3] Our study on ECC was unique because of the research population and the detailed information on social position. No other study in Belgium comprehensively investigated the oral health of infants. Nevertheless, our study showed that already in this age group a considerable number of children has caries. Also we succeeded in including population groups that are often excluded in databases e.g. illegal migrants. This was made possible by contacting the participants in the waiting rooms of Child & Family consultations, by translating the questionnaire in five languages and by involving translators. Further, in the “Signal-Tandmobiel®” study, the information on social position was limited to occupational class whereas in our study we collected information on various indices for social status. This made it possible to build a multiple regression model that includes a wide range of possible determinants and to investigate the contribution of household-based and of area-based determinants of social position on ECC (see further).

### **The contribution of household-based and area-based determinants of social position on the prevalence of two common conditions in childhood: head lice and early childhood caries**

In the study reported in paper 1 we focused on the impact of the social status of the child’s family on the child’s chance to get head lice. The multi-level analysis shows that clustering children in groups (in schools and in classes) is the most important factor determining the child’s risk on getting head lice. Our study did not focus on which school or class characteristics explain this clustering effect but showed that in spite of this effect (and after accounting for a range of confounding factors such as age, gender, hair characteristics and the number of children in the household) the social position of the family remains significantly associated with the prevalence of head lice. **(paper 1)** On child level, the impact of social status on the prevalence of head lice is probably mediated by the social gradient with respect to the treatment actions parents undertake. This hypothesis seems to be confirmed by the finding that children from families with the lowest occupational level have higher chances of being positive with head lice on the second screening than children from families with the highest occupational levels. One could hypothesize that knowledge, skills, coping style, social support, health beliefs and material circumstances contribute to this relationship.

Concerning ECC, social determinants play an important role. In our study, presented in paper 2, we consider the contribution of (1) social determinants at the household-level and (2) a social determinant

on neighbourhood-level, on ECC, adjusting for age, sex, family size, and oral health-related behaviour (oral hygiene and dietary habits). (**paper 2**) The logistic multiple regression model indicates an important impact of neighbourhood: when adjusting for household-based determinants of social position (income, education, occupation), for ethnicity of the mother and for oral health-related behaviour, children living in a deprived neighbourhood in Ghent have a 11 times higher risk for having ECC, compared to children living in a non-deprived neighbourhood (OR 11.08, 95%CI=3.4-30.77). An important, independent impact of neighbourhood on health has been illustrated before. [4]**Error! Reference source not found.****Error! Reference source not found.****Error! Reference source not found.****Error! Reference source not found.** In the explanation of this phenomenon in literature, emphasis is put on the availability of better and more collective resources in non-deprived neighbourhoods. For example, it is possible that the quantity of brushing the children's teeth does not differ according to social class, but the quality of the brushing or the material circumstances do. Whether or not this mechanism can also explain the findings of our study should be tested in further research. A second important finding is that children whose mother had an East European nationality at birth, have a much higher risk of having ECC than children whose mother had a West European nationality at birth, even when controlling for social position of the family, oral health behaviour and neighbourhood deprivation (OR 19.09, 95%CI= 3.10-117.54). However, one should be cautious in interpreting this latter finding because of the small number of Eastern European mothers in the sample (explaining the wide CI). The possible effect of ethnicity could be explained by possible differences in fluoride expose. Yet, as this was not measured in this study, we were not able to test this hypothesis. Also, it is possible that ethnicity is associated with the oral health of the mothers, caused by for instance differences in dental health care use and resulting in different levels of colonisation with streptococcus mutans and lactobacilli in both the mothers and the children.

#### **The social gradient in the use of medical care Belgium**

The accessibility of the health care system has an impact on the social gradient in health.[9] Inequity in medical care use in Belgium has been demonstrated before.**Error! Reference source not found.****Error! Reference source not found.** However, until recently, no databank included both indices of social position and registered medical care use, and inequity in medical care use was calculated using reported utilisation data. In 2003 the Department of General Practice and Primary Health Care performed a pilot study in which the data of the National Health Interview Survey 1997 were linked with registered health care utilisation data from the Sickness Funds ('ziekenfondsen'). Firstly, this study shows that people from the lowest education levels are more likely to consult a general practitioner, even when taking into account their higher health needs. In contrary, these people have a significantly lower likelihood to consult a specialist than their better-off counterparts, even when taking into account their worse health status. This seems to indicate that there is a clear social gradient in the gate through which people enter the health care system. Secondly, this study shows that it is feasible to anonymously link the data from the National Health Interview Survey and data on health care use recorded by the Sickness Funds. (**paper 3**)

#### **Explaining inequity in medical care use: the perspective of people living in poverty**

In a qualitative study we explored the enabling and limiting factors that people living in poverty experience in their use of medical care. A distinction was made between factors determining a person's inclination to formulate a need for health care, and facilitators and barriers people can be confronted with when accessing health care. The latter are related to the individual and his immediate context, to the organisation of the health care system and to the functioning of the health care providers. (**paper 4**)

In **paper 5** we proposed a comprehensive model to look at barriers and facilitators in the accessibility of the health care system for people living in poverty. Hereto we integrated two existing and complementary models for explaining differences in medical care use, and evolved this new model by translating the concepts from the perspective of deprived people, and adding new domains and dimensions mainly at the micro-level. Through the description of enabling and limiting factors, the proposed model offers several handles for interventions to tackle the social inequality in the use of medical care. But above all, it supports the importance of a multi-level approach, focusing on strengthening individuals and communities, improving access to essential facilities and services, and encouraging macro-economic and cultural change.

#### **The social gradient in doctor-patient communication**

In the exploratory study with people living in poverty described above, the communication between doctor and patient is mentioned as a possible barrier or facilitator in the use of medical care. Also, more and more, in public debates and in publications of action-groups on poverty emphasis is put on non-financial barriers in the accessibility of the health care and very often doctor-patient communication is specifically mentioned.[12]

In **paper 6** we present the findings of a systematic literature review. This study showed a clear social gradient in the doctor-patient communication. Patients from lower social classes receive less positive socio-emotional utterances and a more directive and less participatory consulting style, characterised by significantly less information giving, less directions and less socio-emotional and partnership building utterances from their doctor. These differences in the doctor's communicative style can partly be explained by the patient's communicative behaviour; patients from lower social classes communicate less active, show less affective expressiveness eliciting less information from their doctor. Also, the doctor tends to vary his communication style by his perception of the patient's interest in or ability to participate in care. Yet, this perception is often a mis-perception. The study also revealed a gap in the knowledge on the social differences in the non-verbal behaviour of doctor's. However, it is known that the doctor's non-verbal behaviour has an important impact on the patient's satisfaction.[13]

### **The doctor's attitude towards poverty and the deprived patient's perception of health and health care**

As the doctor's perception of the patient seems to be of importance for his/her consultation style, we aimed in our final study to explore the doctor's attitude towards patients from lower socio-economic classes and his/her perception of this patient group's attitude towards health care (**paper 7**). In-depth-interviews with general practitioners in Ghent revealed that they adopt at theoretical level a multi-dimensional approach of the concept of poverty. However, this is not always reflected in their attitudes and behaviour. The GPs' perception of the attitude of deprived patients towards health and illness shows evidence for both paternalism and empathy. A contextual approach of the patient is found for some doctors, however others adopt a rather "blaming the victim attitude". To improve the accessibility of primary health care, the respondents refer to actions to decrease financial barriers, the importance of actions on the community level and a nation-wide battle against poverty. In their own practice the respondents deal with deprived patients by indeed adapting adequate doctor-patient communication, but also by the optimisation of referrals to and cooperation with specialists and other health care workers (e.g. social workers). This study was the first to investigate this topic. The way in which the GP's attitudes and perceptions act as a barrier to healthcare for the deprived may have been overlooked in the existing research because most previous work has been quantitative in nature, whereas hypothesis-generating qualitative methods are perhaps more appropriate for this area of research.

## 4.2 Conclusion: what do these studies add to our knowledge on socio-economic health differences

1. Socio-economic health inequalities in Belgium are found already in the early stages of life:
  - the participating children, all between 24 and 35 months old, from families with a low educational level or a low occupational level, and children living in a deprived neighbourhood have a higher prevalence of ECC in comparison with children from families with higher educational levels or children living in a non-deprived neighbourhood (bivariate analysis).
  - in this study, the children, children (between 2,5 and 12 years old) from families with a low occupational level have a higher prevalence of head lice than children from families with higher occupational levels (bivariate analysis)
2. Living in a deprived neighbourhood and having a mother with an Eastern European nationality at birth seem independently associated with a higher risk on ECC.
3. Getting head lice is primarily determined by the school the child goes to and class in which it sits.  
Given that a child goes to a certain school and sits in a certain class, its chance of getting head lice is still determined by the social class of its family.
4. After adjusting for need, Belgians with a lower education level have a higher likelihood to consult a GP and a lower likelihood to consult a specialist, after adjusting for need. In the analysis that made no distinction between the GP or the specialist, no social gradient was found in the likelihood to consult.
5. Linking the data of the National Health Interview Survey and data on health care use, registered by the Sickness Funds, is feasible and results in a potentially important database.
6. A qualitative study with people living in poverty resulted in a detailed inventory of barriers and facilitators of health care utilisation, as Belgian people living in poverty experience them. This study was unique because no similar study ever extensively explored the deprived patient's health services utilisation patterns in the context of the Belgian health care system.
7. A model was developed that depicts the health care utilisation process for people living in poverty. The developed model integrates the results of an explorative, qualitative study with deprived persons (see 6) and the existing models and barriers found in the literature. The developed framework offers a more comprehensive guide to understanding multiple influences on the health services utilisation process, reveals new concepts and refines existing ones, and suggests mechanisms by which factors located at different levels in the process of health services utilisation may be related.  
Limiting and enabling factors in the accessibility of health care for people living in poverty are situated at different levels: (1) the macro-level (public policy), (2) the meso-level (community) and (3) the micro-level (individual, health care system and health care providers).  
On the micro-level a distinction was made between factors determining a person's inclination to formulate a need for health care, and facilitators and barriers people can meet when accessing health care: related to the individual and his immediate context, to the organisation of the health care system and to the functioning of the health care providers.
8. Doctors adopt a different communicative style with people from different socio-economic classes (literature review). Most studies focus on differences on verbal communication. A lack of scientific data on the social gradient in non-verbal communication was found.
9. In-depth-interviews with GPs lead to the hypothesis that doctors adopt a multi-dimensional approach of the poverty-concept at theoretical level but this is not always translated in their attitudes and behaviour towards their patients. This gap may have an impact on their communicative style with deprived patients.

### 4.3 An agenda for future research

An important lesson we learned from this doctoral project is the complex background of inequalities in health. Further research is needed to disentangle this complex relationship of determinants.

First, (more) longitudinal studies are needed that include a broad range of factors in order to assess the independent contribution of the various determinants on the health inequalities and the correlation between these factors. Financial sources should be found to finance these large national studies.

Former experiences in e.g. The Netherlands demonstrate high scientific benefits of this type of studies.[16]

Secondly, hypotheses on the impact of “new” determinants are formulated, e.g. the concept of “social capital” or the lifecourse perspective. Future research is needed on the conceptualisation of these aspects. In the case of social capital the concept misses clarity in the indicators to be measured, the level on which the concept should be measured (individual, aggregate or community level), the use of composite indexes versus single item measures, ...<sup>1</sup> Further, new studies should test the formulated hypothesis.

Third, a limitation of many studies, including some of ours, is the systematic underrepresentation of certain population groups such as refugees and people with an illegal status. In quantitative studies this group is missed because they are not included in the National Register, used to select the participants, or because they are difficult to contact. In qualitative studies as ours the language problem that limiting for the study that these persons are excluded.

Concerning the Belgian situation, little information is available even on the extent of social inequalities in health. Monitoring social inequalities in mortality will be possible when future versions of the National Mortality Database will be developed. Important instruments in the monitoring of social inequalities in morbidity are the Health Interview Surveys and the Census (since the Census includes also health related questions). Therefore a further conduction of these surveys is important.

Moreover, when linked to data from the Sickness Funds, the National Health Interview Survey can also be a potentially important instrument to assess policy decisions concerning the accessibility of the health care system. In this dissertation we presented partially results of the linkage of the 1997 Survey. It would be interesting to perform this linkage in the future with more recent and more extended data (e.g. also data on the consumption of prescribed medication).

Finally, there is need for intervention- and action research. Assessing the impact of certain initiatives (e.g. the introduction of multidisciplinary community health centres with a capitation system instead of a fee-for-service) could be helpful in order to further policy measures. Moreover, an anticipatory assessment of general (health related) policy measures could avoid increasing dualization in e.g. the accessibility of the health care system.

### 4.4 How to tackle socio-economic inequalities in health? An agenda for action.

People are not born equal: some have higher chances to live a long and healthy life than others. It is an illusion that one day complete equality between all people will be reached. Some of the aspects that affect health such as age, genetic predisposition and sex, cannot be changed by individual choice or public policy. However, a challenge for public policy is the number of persons who are victim to premature death or illness as a consequence of social circumstances, of the social selection mechanisms, of policy regulations or public services (e.g. the health care system).

How can public policy tackle socio-economic inequalities in health? The answer to this question is complex because it is likely that a combination of factors determines the health gaps between the different social classes: material or structural circumstances, psychosocial circumstances, health related behaviour, accessibility and use of health care services, ... As the determinants of the social inequalities in health are multiple and situated at different levels, its remedies must also employ a broad and multi-axial focus. In line with Whitehead et al. [15] we distinguish four levels on which policy initiatives can influence inequalities in health:

- strengthening individuals;
- strengthening communities;

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<sup>1</sup> Morgan A. Personal communication (National Health Service, National Development Agency, UK),

- improving access to essential facilities and services;
- encouraging macroeconomic and cultural change.

Policies that attempt to **strengthen individuals** aim to change people's behaviour or skills through personal education and empowerment. [15] Our study on head lice shows a much higher failure rate in the treatment in families with a lower social position. Probably this explains why social position is one of the few individual features related with the prevalence of head lice. The treatment failure in these social groups could partly be due to aspects on the individual level: "inadequate" health beliefs, reduced coping and cognitive skills to select the correct treatment, the necessity to apply a short-term "survival" perspective that decreases compliance, etc. The development of specific support programmes for families from lower socio-economic classes could be beneficial in this context. Next to guidance in the treatment of the family members, in these programs emphasis should be put on the de-stigmatisation, the empowerment of the mothers and the involvement of the whole family. An example of this approach is the "sherpa-initiative"; this initiative is part of the larger project on head lice that was set up by the community health centres in Ghent in collaboration with local health services in which also our data collection took place (see paper 1). In the sherpa-initiative nurses intensively supervised "core families" where head lice were a recurrent problem. With this approach they managed to keep some of these families lice-free. Further the nurses had the impression the coping skills of the mothers in relation to head lice and other health problems and their self-esteem improved.

When **strengthening communities**, policies can focus on strengthening the social cohesion through networks in the community and on the development of the physical, economic and social structures of the neighbourhood. [15] An important condition for success of these processes is the involvement of the community members in all stages. In this context, we mention Community Oriented Primary Care (COPC) as an approach to improve the quality of neighbourhoods and the health of its inhabitants. [16] The COPC approach is mostly applied by local health services and targeted at a well-defined population (e.g. a neighbourhood). It develops a systematic intervention towards the most important health problems of the population by taking four steps: definition of the target-population, detection of the most important health problems ("community diagnosis"), development of intervention-programmes and evaluation and monitoring. To accomplish a community diagnosis different information sources are used: experiences of the health care organisation (as family physician, nurse, social worker, etc.), secondary analyses of health related data (about unemployment, migration, vulnerable groups in society, etc.) and newly collected data. Intervention programmes are defined starting from clear objectives, realistic timing, adequate methods and, most important of all, participation of the target group during the whole process.[17] We illustrate this with "Healthy teeth": a community health project set up by the community health centres in Ghent in collaboration with health organisations such as Child & Family, the Flemish Society for Healthy Teeth, ... The basis for this project was the poor dental health of the young children in the neighbourhood. In a first step the extent of this problem was measured by a survey. This study found not only high prevalence numbers of ECC but also revealed a clear social gradient in the dental health of the children between 25 and 34 months old. Also an important association between neighbourhood and the prevalence of ECC was found. (see paper 2) A community diagnosis was made through a comprehensive questioning of the target group, and of the different actors involved in paediatric dental health in the neighbourhood (dentists, Child & Family, community health workers, ...). For example a board game was developed to explore the possible underlying mechanisms of the bad dental health. This board game was played several times with children and with parents and identified several barriers for good oral health behaviour. The interactive debate with community members, local health workers, child health organisations and local policy makers set the priorities in the neighbourhood for interventions: the starting of dental care projects in the schools, a "healthy teeth day" in the neighbourhoods, stimulating local shops to offer inexpensive but good toothbrushes and toothpaste, developing a CD-ROM with information for health care workers,... As a result of the project, oral health is now included as a prevention issue in the consultations of Child & Family in Ghent.

The third policy level focuses on improving **access to essential facilities and services**. These policies tackle the physical and psycho-social conditions in which people live and work, including adequate housing, safe and fulfilling employment, essential health care, education services and welfare in times of need. **Error! Reference source not found.**[15]

Analysis of the health care consumption patterns shows a clear social gradient. Our exploratory research with people living in poverty identified several limiting factors in the use of medical health care. Each of these factors can be inspiring for specific interventions. Important is that it needs a set of

complementary measures to improve the accessibility of the health care system. For example the participants in the study emphasise the importance of approaching the process of medical care use in a broader context. Not only financial barriers hinder them to seek medical care but also the context of poverty in which they live influences medical care use already at the stage of their inclination to formulate a need for care. At the other hand, the in-depth-interviews with GPs on their perception of poor patients' attitude towards health and illness and the literature review we performed seem to indicate a non-optimal communication between physicians and their patients from lower socio-economic classes. Therefore, schools and universities training future health care workers could be stimulated to include communication skills training and programmes on what it means to live in poverty in their curricula.

Finally, **macro-economic changes** should be stimulated in order to reduce poverty and the wider adverse effects of inequality on society. These include macro-economic and labour market policies, the encouragement of cultural values promoting equal opportunities and environmental hazards control on a national and international scale. These policies tend to span several factors and work across the population as a whole.[15] It is clear that social health inequalities are a socio-political problem. Reducing them must therefore include a strong focus on reducing poverty and carefully monitoring the impact public policies on health, particularly on the most vulnerable members of our society. The implementation of new policy measures should therefore be accompanied by an analysis of the impact this new measurement could have on the social gap in health.

This research was not a behind-the-desk experience. It was a confronting journey into the lives, emotions and concerns of people surviving in poverty and trying to deal with their health problems. The most fundamental lesson of this experience is the need for a profound respect for the way those most in need struggle with health and illness. Therefore, we hope that this work will also have a societal impact: if this work contributes to the more understanding, increased attention and action to reduce socio-economic differences in health, its writing have been worthwhile.



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## Summary/samenvatting

### Summary

#### *Introduction*

The health of the populations in industrialised countries has never been better: infectious diseases that were a major health threat in the past centuries are now largely under control **Error! Reference source not found.** and all European countries have enjoyed a continuous increase in life expectancy **Error! Reference source not found.** However, these gains are not shared equally by all members of society. People in upper social classes -those who have a good education, hold high-paid jobs, and live in comfortable neighbourhoods- live longer and healthier than people in lower social classes. Moreover, some authors suggest that the gap between social classes is widening. **Error! Reference source not found.** Many studies have suggested explanations for the undeniable association between socio-economic position and health. One of the factors that could contribute to the inequality in health is the differential use of medical services. This could be determined by patient-related factors such as health literacy or by the accessibility of the health care system. **Error! Reference source not found.** Another explanation, that gains more and more attention in literature, is the impact of characteristics of the area or the neighbourhood where an individual lives. The studies on the neighbourhood-level contend that the place where a person lives makes a difference to health related behaviour and health outcomes, even after adjusting for individual risk factors such as smoking or low income. **Error! Reference source not found.**

With our research we try to answer some unsolved questions concerning the prevalence and the determinants of socio-economic health inequalities in Belgium. Hereto we conducted six studies, described in 7 papers.

#### *Results of the studies*

### **Part I: Describing the social gap in health**

#### **Study 1, part I: The socio-economic gradient in the prevalence of head lice in schoolchildren**

Willems S, Lapeere H, Pasteels I, Naeyaert J-M, De Maeseneer J. The prevalence of head lice in schoolchildren : importance of socio-economic status and individual characteristics. *European Journal of Dermatology* 2005; 15(5): 387-92.

The aim of this study was to determine the prevalence of head lice in schoolchildren in Ghent (part I) and to investigate the contribution of household-based determinants of social position on the child's chance to get head lice (part II). Hereto 6169 schoolchildren aged 2.5 to 12 years in Ghent were screened on head lice using the wet-combing technique. Also the prevalence of head lice 14 days after treatment advice was determined. Age, sex, educational level and hair characteristics of the child, social position of the family, and number of children in the family was collected by the school health department. The prevalence of head lice was 8.9%. 17.6% of the children in families from the lowest occupational class had head lice, compared to 5.2% of the children in families from the highest occupational classes. 14 days later 50.0% of the positive children in families from the lowest occupational class were still positive, whereas 23.5% of the children in families from the highest occupational classes were.

#### **Study 2, part I: The socio-economic gradient in the prevalence of early childhood caries (ECC)**

Willems S, Vanobbergen J, Martens L, De Maeseneer J. The independent impact of household and area based social determinants on early childhood caries (ECC): a cross-sectional study in inner city children. *Family and Community Health* 2005 28(2): 168-175.

In this non-randomised, cross-sectional study we aimed to determine the prevalence of ECC in inner city children within the city of Ghent (Belgium) (part I) and to investigate the independent association between household and area based socio-economic measures of the family's socio-economic status, and ECC (part II). All children aged between 24 and 35 months old, attending the final consultation at one of the 12 Child & Family Health Clinics in the inner city of Ghent during the 6-month study period were included (n=384). Data on dental caries and oral hygiene were collected by clinical examination. Information on demographic situation, socio-economic status of the family and oral health related

behaviour was collected by a face-to-face interview. The used questionnaire was based on validated questionnaires and pre-tested. ECC was diagnosed in 18.5% of the children. A clear socio-economic gradient in the prevalence of ECC was found: 36.7% of the children from families with the lowest educational levels had ECC, whereas 7.8% of the children from families with the highest educational levels had ECC.

## **Part II: Exploring the social gap in health**

### ***Study 1, part II: The contribution of household-based determinants of social status on the social gap in the prevalence of head lice***

Willems S, Lapeere H, Pasteels I, Naeyaert J-M, De Maeseneer J. The prevalence of head lice in schoolchildren : importance of socio-economic status and individual characteristics. *European Journal of Dermatology* 2005; 15(5): 387-92.

A multi-level analysis of the data suggested that getting head lice is primarily determined by the school the child goes to and class in which it sits. Given that a child goes to a certain school and sits in a certain class, the social class of the child's family is one of the determinants of the child's chance of getting head lice.

Taking into account the results of this study, the management of head lice should adopt a community-based approach equally involving families, schools, health care professionals and the government. This study was the first large-scale study in Belgium reporting on the social gradient in head lice. Moreover, at the moment of submission of the article, no other international study had analysed the data of a large group of children in a multi-level design.

### ***Study 2, part II: The contribution of household-based determinants and of area-based determinants of social status on the social gap in the prevalence of early childhood caries***

Willems S, Vanobbergen J, Martens L, De Maeseneer J. The independent impact of household and area based social determinants on early childhood caries (ECC): a cross-sectional study in inner city children. *Family and Community Health* 2005 28(2): 168-175.

The database on ECC contained detailed information on the child's family's social position: income, educational level, occupational level and ethnicity of the mother as household-based characteristics; and neighbourhood deprivation as an area-based characteristic. Ethnicity of the mother, and neighbourhood deprivation were the two socio-economic variables independently associated with ECC (adjusted for age, family size, the other socio-economic indices and oral health related behaviour). These findings may contribute to more effective interventions to reduce social inequalities in ECC by identifying the socio-economic groups at risk within the overall population. This was the first study in Belgium reporting a social gradient in oral health in this age group and giving detailed information on the contribution of the several determinants of ECC.

### ***Study 3: The inequity in medical care use in Belgium***

Willems S, Pasteels I, Kunst A, De Maeseneer J. Socio-economic differences in the utilization of health care services in Belgium: an analysis based on registered data. *BMJ*. Submitted.

Previous studies investigating the social gradient in the use of medical care used data on reported medical care. In this study the data of the National Health Interview Survey 1997 were linked with the corresponding registered medical utilisation data, delivered by the Sickness Funds. The new database contained information on a representative sample of the non-institutionalised population residing in Belgium (n=9.184). The study shows that people from lower socio-economic classes have a higher likelihood to consult a GP and a lower likelihood to consult a specialist, when taking in account their need for medical care. They also consult more frequently a GP and less frequently a specialist in comparison with people from higher socio-economic classes. These findings, based on registered health care use, add new information on the association between the number of consultations and educational level and may be an illustration of the "inverse care law".

### ***Study 4: The limiting and enabling factors in the use of medical care: the perspective of people living in poverty***

- Willems S, De Roo L, Anthierens S, Derese A, De Maeseneer J. Understanding inequity in the use of medical care: the perspective of people living in poverty. *Health Policy*. Submitted.
- Willems S, De Roo L, De Maeseneer J. Towards a comprehensive model for understanding the complexity of medical care utilisation patterns by the poor and underserved. *Health Policy*. Submitted.

In this study, a comprehensive conceptual framework for health services utilisation was developed, integrating the results of an explorative study with deprived persons and the existing models and barriers found in the literature. In 21 focus group interviews, the breadth and scope of barriers and facilitators to healthcare as disadvantaged people in Belgium experience them were explored. The framework developed offers a more comprehensive guide to understanding multiple influences on the

health services utilisation process, reveals new concepts and refines existing concepts, and suggests mechanisms by which factors located at different levels in the process of health services utilisation may be related.

#### ***Study 5: The social gradient in doctor-patient communication***

Willems S, De Maesschalck S, Deveugele M, Derese A, De Maeseneer J. Socio-economic status of the patient and doctor-patient communication: does it make a difference? *Patient Education and Counseling*. 2005 Feb;56(2):139-46.

In this systematic review, in which 12 original research papers and meta-analyses were included, we explored whether patients' socio-economic status influences doctor-patient communication. Results show that patients from lower social classes receive less positive socio-emotional utterances and a more directive and less participatory consulting style, characterised by significantly less information giving, less directions and less socio-emotional and partnership building utterances from their doctor. Doctors' communicative style is influenced by the way patients communicate: patients from higher social classes communicate more actively and show more affective expressiveness, eliciting more information from their doctor. Patients from lower social classes are often disadvantaged because of the doctor's misperception of their desire and need for information and their ability to take part in the care process. Very little information was found on the social gap in non-verbal communication. By increasing the doctors' awareness of the communicative differences and by empowering patients to express concerns and preferences, a more effective communication could be established.

#### ***Study 6: The GP's perception of poverty and of poor patients***

Willems S, Swinnen W, De Maeseneer J. "Tell me about poverty": a qualitative research on the perceptions of family physicians. *Family Practice*. 2005 Apr; 22(2): 177-183.

The aim of this study was to explore the family physicians' definition of deprivation and their perception of the deprived patients' attitude towards health and health care, to get insight into the ways family physicians deal with the problem of deprivation and to present the proposals family physicians make to improve health care for the deprived. Hereto 21 in-depth-interviews with GPs were carried out. All the interviewed GPs worked in one of the deprived areas in Ghent. The study revealed that the interviewed GPs adopt at theoretical level a multi-dimensional approach of the concept of poverty. However, this is not always reflected in their attitudes and behaviour. The GPs' perception of the attitude of deprived patients towards health and illness shows evidence for both paternalism and empathy. A contextual approach of the patient is found for some doctors, however others adopt a rather "blaming the victim attitude". To improve the accessibility of primary health care, the respondents refer to actions to decrease financial barriers, the importance of actions on the community level and a nation-wide battle against poverty. This study was the first to investigate this topic and generated several hypothesis that should be tested in further studies.

#### ***An agenda for further research***

Research on the prevalence and the explanation of socio-economic differences in health is important. We give some suggestions for further research:

- more longitudinal studies are needed that include a broad range of factors in order to assess the independent contribution of the various determinants on the health inequalities and the correlation between these factors;
- future research is needed on the conceptualisation of "new" aspects in the explanation of socio-economic health differences (e.g. social capital);
- attention should be paid to the enrolment of minority groups in studies (e.g. refugees and people with an illegal status) or specific studies on these groups should be set up;

Concerning the Belgian situation:

- future versions of the National Mortality Database, the Health Interview Surveys and the Census are important to monitor health expectancy and social inequalities in morbidity;
- linking databases could result in important instrument to assess policy decisions concerning the accessibility of the health care system;
- there is need for intervention- and action research.

## Samenvatting

### *Inleiding*

De gezondheid van de bevolking in geïndustrialiseerde landen is nooit zo goed geweest als op heden: infectieziekten die een belangrijke doodsoorzaak waren in het verleden, zijn nu onder controle **Error! Reference source not found.** en in alle Europese landen blijft de levensverwachting toenemen **Error! Reference source not found.** De keerzijde van deze medaille is echter dat deze vooruitgang in gezondheid niet geldt voor alle lagen van de bevolking: mensen uit de hoogste sociaal-economische klassen (zij met een hoog opleidingsniveau, een goedbetaalde job, en wonend in veilige buurten) leven langer en gezonder dan mensen uit de laagste sociaal-economische klassen. Sommige auteurs suggereren zelfs dat deze kloof in mortaliteit en morbiditeit tussen de sociale klassen nog toeneemt. **Error! Reference source not found.**

**Error! Reference source not found.** De verklaring van sociaal-economische ongelijkheid in gezondheid en sterfte is een complexe materie en diverse auteurs hebben hieromtrent suggesties geformuleerd. Eén van de verklarende factoren is het verschil in medisch zorggebruik door mensen uit verschillende socio-economische klassen. Dit verschil zou enerzijds kunnen verklaard worden door verschillen in de individuele kenmerken van patiënten uit de verschillende klassen (vb. copingvaardigheden). Anderzijds speelt ook de toegankelijkheid van het gezondheidszorgsysteem hierin een rol. **Error! Reference source not found.** Een andere verklaring voor sociaal-economische gezondheidsverschillen, die steeds meer aanhang krijgt, richt zich op de impact van buurtkenmerken. De studies die uitgaan van deze benadering tonen aan dat buurtkenmerken een onafhankelijke invloed hebben op het voorkomen van sociaal-economische gezondheidsverschillen, ook na het controleren voor individuele kenmerken zoals opleiding of inkomen. **Error! Reference source not found.**

In dit doctoraatsproject bestudeerden we een aantal onbeantwoorde vragen m.b.t. de prevalentie en de onderliggende verklaringsmechanismen van sociaal-economische gezondheidsverschillen in België. Hiertoe hebben we 6 studies uitgevoerd, die werden gerapporteerd in 7 papers.

### *Resultaten van de studies*

#### **Deel I: Beschrijving van sociaal-economische verschillen in gezondheid**

##### **Studie 1, deel I: Sociaal-economische verschillen in het voorkomen van hoofdluizen bij schoolkinderen**

Willems S, Lapeere H, Pasteels I, Naeyaert J-M, De Maeseneer J. The prevalence of head lice in schoolchildren : importance of socio-economic status and individual characteristics. *European Journal of Dermatology* 2005; 15(5): xxx-xxx. Accepted on 03/05/2005.

Deze studie had enerzijds tot doel om de prevalentie van hoofdluizen bij schoolkinderen in Gent in kaart te brengen (deel I). Anderzijds trachtten we na te gaan of de beroepsklasse van de ouders, als sociale variabele op gezinsniveau, bijdraagt tot de kans op het krijgen van hoofdluizen (deel II). Hiertoe werden 6169 Gentse kinderen tussen 2.5 en 12 jaar gescreend op hoofdluizen, gebruik makend van de nat-kam-methode. Verder werd ook nagegaan of de kinderen positief bij de eerste screening, nog steeds positief waren 14 dagen nadat behandelingsadvies was gegeven. Informatie over leeftijd, geslacht, sociale positie van het gezin en het aantal kinderen in het gezin werd aangeleverd door de Centra voor Leerlingenbegeleiding (CLB). Hoofdluizen kwamen voor bij 8.9% van de gescreende kinderen. 17.6% van de kinderen uit gezinnen met de laagste sociale positie (gemeten a.h.v. het beroep van de ouders) waren positief. Dit in tegenstelling tot de kinderen uit gezinnen met de hoogste sociale positie waarvan 5.2% positief was. 14 dagen later waren nog 50.0% van de kinderen die bij aanvang positief waren en uit de gezinnen met de laagste sociale positie kwamen, positief. Bij de kinderen uit de gezinnen met de hoogste sociale positie was dit 23.5%.

##### **Studie 2, deel I: Sociaal-economische verschillen in het voorkomen van zuigflescariës<sup>2</sup>**

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<sup>2</sup> “Zuigflescariës” is hierbij een vertaling van “early childhood caries”. In het Nederlands bestaat echter geen consensus over de juiste vertaling van het Engelstalige concept.

Willems S, Vanobbergen J, Martens L, De Maeseneer J. The independent impact of household and area based social determinants on early childhood caries (ECC): a cross-sectional study in inner city children. *Family and Community Health* 2005 28(2): 168-175.

In deze niet-gerandomiseerde, cross-sectionele studie gingen we na in welke mate zuigflescariës voorkomen bij kinderen in Gent (deel I). Verder gingen we na wat de onafhankelijke bijdrage is van sociale variabelen op gezinsniveau (opleidingsniveau, beroepsklasse en inkomen) en van een sociale variabele op wijkniveau (achtergesteldheid van de buurt) op het voorkomen van zuigflescariës bij Gentse kinderen (deel II). Alle kinderen tussen 25 en 34 maanden oud, die zich tijdens de 6 maanden van deze studie aanmeldden voor de laatste consultatie in één van de 12 deelnemende consultatiebureaus van Kind & Gezin in Gent, werden geïncludeerd in deze studie (n=384). De mondgezondheid van de kinderen werd nagekeken a.h.v. een klinisch onderzoek door een tandarts. A.h.v. een face-to-face interview met de begeleider van het kind werd tevens informatie over de demografische situatie, de socio-economische status van het gezin en het mondgezondheid gerelateerd gedrag geregistreerd. De vragenlijst die werd gebruikt bij het interview werd ontwikkeld op basis van gevalideerde vragenlijsten en werd gepretest.

Zuigflescariës werd vastgesteld bij 18.5% van de kinderen die deelnamen aan deze studie. Er werd een duidelijk sociaal-economisch verschil vastgesteld: 36.7% van de kinderen uit de gezinnen met de laagste socio-economische status hadden zuigflescariës, terwijl de kinderen uit gezinnen met de hoogste socio-economische status in 7.8% van de gevallen zuigflescariës hadden.

## **Deel II: Exploratie van sociaal-economische gezondheidsverschillen**

### **Studie 1, deel II: De bijdrage van sociale variabelen op gezinsniveau tot het voorkomen van hoofdluizen**

Willems S, Lapeere H, Pasteels I, Naeyaert J-M, De Maeseneer J. The prevalence of head lice in schoolchildren : importance of socio-economic status and individual characteristics. *European Journal of Dermatology* 2005; 15(5): xxx-xxx. Accepted on 03/05/2005.

Een multi-level analyse suggereerde dat het krijgen van hoofdluizen voornamelijk bepaald wordt door de school waarnaar het kind gaat en de klas waarin het zit. Deze studie onderzocht echter niet welke determinanten dit effect kunnen verklaren. Ervan uitgaand dat een kind naar een welbepaalde school gaat en in een welbepaalde klas zit, blijkt de sociaal-economische positie van het gezin een rol te spelen in het risico dat bij het kind hoofdluizen worden gevonden. De resultaten van deze studie kunnen bijdragen tot het uittekenen van interventies om het voorkomen van hoofdluizen te reduceren. Meer bepaald pleiten de resultaten voor een brede aanpak van het hoofdluizenprobleem: interventies dienen zich zowel te richten op scholen en wijken als op individuele gezinnen. Deze studie was de eerste grootschalige studie over hoofdluizen in België waarmee een sociale gradiënt in het voorkomen van hoofdluizen kon worden aangetoond. Op het moment dat deze studie werd aangeboden aan een peer-reviewed tijdschrift, was er tevens geen enkele andere internationale studie gepubliceerd die aan de hand van een multi-level design de determinanten van het risico op een besmetting met hoofdluizen analyseerde.

### **Studie 2, deel II: De bijdrage van sociale variabelen op gezinsniveau en van sociale variabelen op wijkniveau tot het voorkomen van zuigflescariës**

Willems S, Vanobbergen J, Martens L, De Maeseneer J. The independent impact of household and area based social determinants on early childhood caries (ECC): a cross-sectional study in inner city children. *Family and Community Health* 2005 28(2): 168-175.

De databank met gegevens over de mondgezondheid van 384 kinderen tussen 25 en 34 maanden oud, bevat eveneens gedetailleerde informatie over de sociale positie van het gezin van het kind: inkomen, opleidingsniveau, beroepsklasse en nationaliteit van de moeder bij geboorte als sociale variabelen op gezinsniveau, en het al dan niet achtergesteld zijn van de buurt waarin het kind woont als sociale variabele op wijkniveau. Uit een multiple logistische regressieanalyse blijken de nationaliteit van de moeder bij geboorte en de achterstelling van de buurt de twee sociale variabelen te zijn die onafhankelijk geassocieerd zijn met het hebben van zuigflescariës. Hierbij werd gecontroleerd voor leeftijd, geslacht, gezinsgrootte, mondgezondheid gerelateerd gedrag en de andere sociale variabelen. De resultaten van deze studie kunnen bijdragen tot het identificeren van risicogroepen voor zuigflescariës en zo ook tot meer efficiënte interventies gericht op het verbeteren van de mondgezondheid van jonge kinderen. Deze studie was de eerste studie in België die de sociale gradiënt in mondgezondheid bij kinderen op deze jonge leeftijd aantoonde. Verder was de studie ook uniek in zijn gedetailleerdheid waarmee hij sociale status registreerde.

### **Studie 3: De sociale gradiënt in het medische zorggebruik**

Willems S, Pasteels I, Kunst A, De Maeseneer J. Socio-economic differences in the utilization of health care services in Belgium: an analysis based on registered data. *BMJ*. Submitted.

Eerdere studies toonden reeds het bestaan van een sociale gradiënt in medisch zorggebruik aan. Zij gingen hierbij uit van gerapporteerd zorggebruik. In deze studie werd gebruik gemaakt van een databank waarbij de gegevens van de WIV Gezondheidsenquête door Interview 1997 op individueel niveau werden gekoppeld aan data over geregistreerd medisch zorggebruik, afkomstig van de verschillende verzekeringsinstellingen. Deze nieuwe databank bevat data van een gerandomiseerde steekproef van niet-geïnstitutionaliseerde in België verblijvende Belgen (n=9.184). Analyses ervan tonen aan dat mensen uit de laagste opleidingsniveaus een hogere waarschijnlijkheid hebben om de huisarts te consulteren dan mensen uit de hogere opleidingsniveaus, ook wanneer gecontroleerd wordt voor de nood aan zorg. Verder blijken zij ook meer frequent beroep te doen op de huisarts. Voor specialistische zorg vinden we het tegenovergestelde resultaat: mensen met de hoogste opleiding hebben een hogere waarschijnlijkheid tot consulteren én consulteren de specialist meer frequent dan mensen met de laagste opleiding. Deze studie voegt nieuwe informatie toe aan de bestaande kennis over de sociale gradiënt in medisch zorggebruik in België, vooral wat betreft het aantal consultaties.

#### **Studie 4: Factoren die het medische zorggebruik hinderen of ondersteunen: het perspectief van mensen die in armoede leven**

- Willems S, De Roo L, Anthierens S, Derese A, De Maeseneer J. Understanding inequity in the use of medical care: the perspective of people living in poverty. Health Policy. Submitted.
- Willems S, De Roo L, De Maeseneer J. Towards a comprehensive model for understanding the complexity of medical care utilisation patterns by the poor and underserved. Health Policy. Submitted.

In de zoektocht naar verklaringen voor de sociale gradiënt voor medisch zorggebruik, werd in deze studie een model ontwikkeld dat de verschillende factoren die het medische zorggebruik hinderen of ondersteunen, in kaart brengt. Bij de ontwikkeling ervan werd uitgegaan van bestaande modellen zoals het "Behavioural Model of Health services utilisation" van Andersen and Newman en het "Socio-Ecological Model" van Sword. Deze werden verder uitgewerkt aan de hand van de resultaten van een kwalitatieve studie met mensen die in armoede leven. Aan de hand van 21 focusgroepinterviews werd geëxploreerd welke factoren de deelnemers hinderen of ondersteunen in hun gebruik van medische zorgverlening. Het ontwikkelde model draagt bij tot het doorgronden van de onderliggende mechanismen in het proces van medisch zorggebruik. Het voegt nieuwe deelgebieden toe aan de bestaande kennis en verfijnt bestaande deelgebieden. Ten slotte worden suggesties geformuleerd omtrent het verband tussen de verschillende determinanten, gelokaliseerd op verschillende niveaus.

#### **Studie 5: De sociale gradiënt in de arts-patiënt communicatie**

- Willems S, De Maesschalck S, Deveugele M, Derese A, De Maeseneer J. Socio-economic status of the patient and doctor-patient communication: does it make a difference? Patient Education and Counseling. 2005 Feb;56(2):139-46.

In de focusgroepgesprekken met mensen die in armoede leven, kwam duidelijk naar voor dat de manier waarop zorgverleners communiceren met hun patiënten een belemmerende maar ook soms een ondersteunende factor kan zijn in verder medisch zorggebruik. Aan de hand van een systematisch literatuuronderzoek waarin 12 originele onderzoekspapers en meta-analyses werden opgenomen, werd geëxploreerd of de arts-patiënt communicatie verschilt naargelang de sociale positie van de patiënt. Dit literatuuronderzoek wijst erop dat artsen bij patiënten uit lage sociaal-economische klassen een meer directe en minder participatorische consultatiestijl hanteren. Deze wordt gekenmerkt door minder sociaal-emotionele uitingen van de arts, minder informatie geven, minder richtlijnen geven en minder empathie. De communicatiestijl die de arts hanteert wordt beïnvloed door de communicatiestijl van de patiënt: patiënten uit de hogere sociaal-economische klassen hebben een meer actieve communicatiestijl (vb. vragen stellen) en tonen meer affectieve expressie. Hierdoor zetten ze de arts meer aan tot een participatieve communicatiestijl en tot het geven informatie. Verder wordt de communicatiestijl van de arts bepaald door zijn perceptie van de informatiebehoefte van de patiënt en diens mogelijkheden om een actieve rol op te nemen in het zorgproces. Echter, vaak strookt deze perceptie niet met de realiteit. Dit literatuuronderzoek wees eveneens op een hiaat in de kennis over de sociale gradiënt in non-verbale communicatie: hierover werden zeer weinig studies gevonden. Dit onderzoek besluit met de suggestie artsen bewust te maken van het verschil in de communicatiestijl die ze hanteren naargelang de sociaal-economische achtergrond van de patiënt en patiënten te stimuleren hun verwachtingen en voorkeuren te uiten t.o.v. de arts.

#### **Studie 6: Hoe conceptualiseren artsen het begrip "armoede" en hoe percipiëren zij patiënten die in armoede leven?**

- Willems S, Swinnen W, De Maeseneer J. "Tell me about poverty": a qualitative research on the perceptions of family physicians. Family Practice. 2005 Apr; 22(2): 177-183.

Eerder onderzoek toonde aan dat artsen een verschillende communicatiestijl hanteren naargelang de sociaal-economische achtergrond van de patiënt. Dit wordt mede bepaald door de perceptie die artsen hebben over de noden en mogelijkheden van de patiënten. Het doel van deze studie was dit

verder te exploreren. Meer specifiek gingen we na hoe artsen het concept “armoede” conceptualiseren, wat hun perceptie is van de attitude van patiënten uit lage sociaal-economische klassen t.o.v. gezondheid en gezondheidszorg, hoe zij omgaan met deze patiëntengroep en welke suggesties zij formuleren om de toegankelijkheid van de gezondheidszorg te optimaliseren. Om dit te exploreren werden 21 diepte-interviews afgenomen met artsen werkend in één van de achtergestelde buurten in Gent. Hieruit bleek dat artsen op theoretisch niveau het concept “armoede” multi-dimensioneel benaderen. Dit bleek echter niet altijd gereflecteerd te worden in hun attitudes en hun gedrag t.o.v. patiënten die in armoede leven. De geïnterviewde artsen tonen blij van zowel paternalisme als van empathie wanneer het hun perceptie betreft over de attitude en kennis van patiënten die in armoede leven t.o.v. gezondheid en gezondheidszorg. Een aantal van de geïnterviewde artsen hanteren een contextuele aanpak van patiënten die in armoede leven, enkele hebben eerder een “blaming the victim” attitude. Om de toegankelijkheid van de gezondheidszorg te verbeteren, suggereren de artsen de financiële barrières te minimaliseren en benadrukken ze een globale aanpak van de armoede. Deze studie was de eerste die deze topic exploreerde. De geformuleerde hypothesen dienen in verder onderzoek te worden getest.

### *Aanbevelingen voor verder onderzoek*

Verder onderzoek naar de prevalentie en de verklaringsmechanismen van sociaal-economische gezondheidsverschillen blijft nodig. Enkele suggesties in verband met verder onderzoek kunnen gegeven worden:

- Er is nood aan meer longitudinale studies die een brede range van variabelen opnemen. Deze studies bieden de mogelijkheid om de onafhankelijke bijdrage van deze variabelen aan de sociale verschillen in gezondheid te bepalen maar om de onderlinge samenhang tussen de variabelen te bepalen.
- In literatuur worden steeds “nieuwe” aspecten in de verklaring voor sociaal-economische gezondheidsverschillen gesuggereerd vb. sociaal kapitaal. Verdere conceptualisering van deze aspecten is nodig.
- Bij het opzetten van nieuwe studies zou bijzondere aandacht zou moeten gaan naar het rekruteren van participanten uit minderheidsgroepen (vb. vluchtelingen) of specifieke studies over deze bevolkingsgroepen zouden moeten worden opgezet.

M.b.t. de Belgische situatie:

- De Nationale Databank Mortaliteit, de gezondheidsenquêtes en de Census zijn belangrijke instrumenten in het monitoren van sociale verschillen in mortaliteit en morbiditeit. Het is belangrijk dat deze dataverzameling doorgaat in de toekomst.
- Er is nood aan interventie- en evaluatieonderzoek waarin bestaande maatregelen genomen om de sociaal-economische verschillen in gezondheid te reduceren, worden geëvalueerd. In deze context zou het koppelen van bestaande databanken een belangrijk instrument kunnen opleveren.



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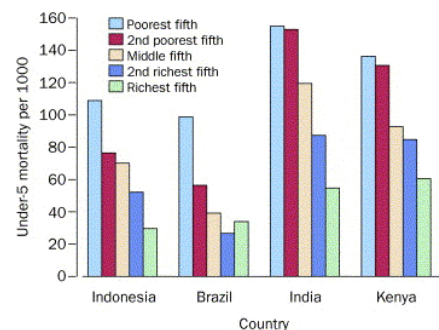
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## Epilogue

In this thesis we focused on the prevalence of socio-economic inequalities in health in Belgium and explored the possible determinants of these inequalities. Therefore, in the introduction of this dissertation we presented the scientific evidence on the extent and the underlying mechanisms of inequalities in health between the socio-economic classes in industrialised countries. However, it is important not to lose sight of the mondial perspective of this problem.

Evidence accumulates that the mortality gaps between rich and poor countries are wide and are possibly growing.**Error! Reference source not found.****Error! Reference source not found.**[26][27] The WHO Health Report 2000 includes information on life expectancy at birth (in years): large differences can be noted, differing from 74.7 years for males and 79.7 years for females in the United Kingdom to 33.2 years for males and 35.4 years for females in Sierra Leone. Differences in the average level of population health are even larger. This is reported in terms of disability-adjusted life expectancy (DALE) at birth, most easily understood as the expectation of life lived in full health, and differs between countries from 69.7 years for males and 73.7 years for females in the United Kingdom to 25.8 years for males 26.0 years for females in Sierra Leone.**Error! Reference source not found.** In contrary to the extensive data on population level such as mortality data **Error! Reference source not found.**, very little data on the health of the diverse socio-economic groups in developing countries is available. Moreover, the data that exist on the level of social classes are rarely expressed in a summary index that would allow temporal or between-country comparisons.[26] Nevertheless, the few studies on this topic show large inequalities in health between social classes. (see Figure 1) **Error! Reference source not found.**[27] For instance in India, the under-5 mortality rate in the lowest socio-economic classes is more than double compared to the highest classes. [27]

**Figure 1: Under-5 mortality rates by socioeconomic quintile of the household for four developing countries**



Source: Victora CG, Wagstaff A, Schellenberg JA, Gwatkin D, Claeson M, Habicht JP. Applying an equity lens to child health and mortality: more of the same is not enough. *Lancet*. 2003;362:233-241.

Although the several explanatory mechanisms identified in industrialised countries (such as material conditions and social position in childhood) will probably be generalizable to developing countries, the relative importance of the different determinants and its dimensions will differ.

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## Dankwoord

Ik ben verheugd dat ik dit dankwoord kan schrijven: opgelucht omdat dit tegelijk ook het schrijven van dit proefschrift afsluit, maar ook omdat het de mogelijkheid biedt te verwoorden wat vaak verloren gaat in de drukte van alledag.

Mijn eerste woord van dank wil ik graag richten tot Prof. dr. Jan De Maeseneer, mijn promotor. Ik herinner me nog mijn sollicitatiegesprek: tussen mijn eindexamens door vroeg je me naar mijn motivatie om wetenschappelijk onderzoek te doen. Twee weken later kon ik beginnen als medewerker aan een onderzoeksproject over health needs assessment. Later passeerden nog het ontslagmanagement en de manpowerplanning in de kinesitherapie. Intussen werkten we samen aan projectvoorstel rond sociale verschillen in gezondheid, wat later mijn doctoraatsproject werd. In de loop van de jaren die volgden bleek jij een onuitputtelijke inspiratiebron voor nieuwe studies, een uitstekende discussiepartner bij de interpretatie van onderzoeksresultaten en bij het formuleren van conclusies. Maar bovenal ben ik je dankbaar dat je me voortdurend stimuleerde om nieuwe horizons te verkennen en me betrok bij het werk dat jij leverde. Meer dan eens had ik op het einde van de dag het gevoel dat ik mijn grenzen verlegd had.

Jan, tijdens je werk als huisarts stelde (en stel) je bijna dagelijks vast dat waar iemands wieg stond zo bepalend is voor diens gezondheid. Het gaf je jaren geleden al het idee om de achterliggende mechanismen hiervan te exploreren en dit resulteerde uiteindelijk in mijn doctoraatsproject. Ik hoop dat dit proefschrift kan bijdragen tot een meer “billijke” gezondheidszorg en zo daadwerkelijk iets kan betekenen voor patiënten in de wachtzaal. Het zou de meest gepaste bedanking zijn die ik jou kan geven.

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Wetteren, 02/10/2005

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## Appendix

### Editorial 1:

Willems S, Derese A, De Maeseneer J. Accessibility of healthcare: the role of the general practitioner. Editorial. Eur J Gen Pract. 2001;7;1;3,5.

### Editorial 2:

Willems S, De Maeseneer J. How to tackle social inequalities in health: between statistics and strategies. Editorial. Eur J Gen Pract. 2003;9:38-9.

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# Accessibility of healthcare: the role of the general practitioner

Sara Willems, Anselm Derese, Jan De Maeseneer

The publication of the Black report<sup>1</sup> in 1980 and the inclusion of a reduction of health inequalities in the World Health Organisation's Health for all policy targets in 1985<sup>2</sup> has increased interest in socioeconomic inequalities in health.<sup>3,4</sup> Research shows that despite an increase in prosperity, social class differences in morbidity and mortality are widening. Health inequalities have been shown in all countries that collect relevant data. Trends in the distribution of income suggest that further widening of mortality differentials may be expected.<sup>3</sup> Researchers looking at the origin of these inequalities have discovered the complexity of the phenomenon. Different models<sup>1,5-7</sup> have been developed as a frame of reference for the explanation of health inequalities. In summary, the following clusters of determinants can be identified: life conditions and behaviour, psychosocial factors, the morbidity during childhood and the socioeconomic status during the lifetime.<sup>5,8</sup>

As yet, most of these comprehensive models still do not include barriers to healthcare and should therefore be extended. The accessibility of the healthcare systems may contribute to inequalities. Accessibility has multiple dimensions: geographical, psychosocial, cultural, financial, administrative, ... and more and more, the knowledge gap in our 'dual society' between those who 'know' and those who 'don't know' has important implications for the accessibility of healthcare.

In this issue of the *European Journal of General Practice*, Lester et al. further refine the cultural dimension of the accessibility of healthcare by introducing the functioning and attitude of general practitioner.<sup>9</sup> There seems to be a dichotomy in general practitioners' attitudes and consultation behaviour towards the homeless. Two groups of

general practitioners are identified: one involving GPs with a more positive and one involving GPs with a more negative disposition towards the homeless. Within both groups a further distinction could be made regarding the degree of the GP's involvement in working with the homeless. In their conclusion, Lester et al. point out that considering the research, the implications for the planning of primary healthcare services for homeless people and for the training of medical students indicate that medical training can positively influence students' attitudes towards homeless people.

As many European countries actually face rising percentages of homeless people – a phenomenon that will probably become worse with increasing migration (from East to West and from South to North) – European general practitioners will be confronted with new problems. It is clear that society can not afford specific categorical interfaces for these people. We should even question whether this categorical approach is adequate and ethically justified because it increases the risk for stigmatisation. So the mainstream general practitioner will be faced with new challenges. He or she will have to integrate the medical approach with a social and anthropological perspective. This requires that the traditional gap between the medical and social sector, not only in the United Kingdom but also in many European countries, should be bridged.

Confronted with problems that challenge general practice in many ways, the temptation re-emerges for the general practitioner to stick to the 'strictly medical' problems, even though there is enough evidence demonstrating that a strictly medical approach cannot be successful. The study of Lester et al. shows that GPs who are able to cope in a positive and active way with disadvantaged people have frames of reference to understand the patient's 'unexpected' behaviour and the complexity of their situation. This gives them opportunities to build up a functional relationship and makes them less vulnerable.<sup>9</sup> If the findings of Lester and her colleagues are confirmed, a way to build up knowledge and expertise beyond 'trial and error' or a 'common-sense' approach can be developed.

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by not knowing 'the answer' and how to avoid a need for even more testing?<sup>9</sup>

Evidence-based practice brings us back to the most basic of skills: communication with patients. So we probably need both the 'computer' and the 'compassion'. Evidence-based medicine has the potential to improve the quality of patient care, but only if doctors can learn to pay attention to the patient's perspective as well as their own, and the difference between them. ■

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#### EDITORIAL

#### Continued from page 3.

This might be the first step in the exploration of a comprehensive strategy that takes into account socioeconomical, anthropological and cultural factors. The 21st century needs general practitioners able to put this into practice. ■

At the WONCA conferences in 2001 at Durban and Tampere, a symposium will be organised on the topic 'Accessibility of health care: the role of the general practitioner'. General practitioners wanting to contribute are invited to contact Professor J De Maeseneer (e-mail: [jan.demaeseneer@rug.ac.be](mailto:jan.demaeseneer@rug.ac.be)).

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# Tackling social inequalities in health

## *Between statistics and strategies*

Sara Willems, Jan De Maeseneer

Higher mortality and morbidity rates between lower and higher socioeconomic classes can still be observed, even in those countries with a well-established social security system (e.g. Scandinavian countries).<sup>1-3</sup> It also appears that people from lower social classes have a higher utilisation rate of the healthcare system compared with patients from the other social groups.<sup>4</sup>

The increasing demand of this patient group and the complexity of the problems they present is a daily challenge for most GPs, not only the ones working in a deprived area. Yet, at the same time, there is only limited evidence on how to tackle these problems and the GP has to act from his/her own experiences to meet the specific demand of the deprived patient. The permanent feeling of incapacity to cope with the needs of these patients can increase the risk for burnout.

In this issue of the Journal, Wyke et al. investigate whether associations between frequent attendance and socioeconomic circumstances remain significant after taking into account underlying ill health and social support. They conclude that the higher levels of frequent attendance are likely to be explained by a greater burden of morbidity amongst people in poorer social circumstances rather than by a greater readiness to consult for whatever reason.<sup>5</sup> Despite the limitations of the presented data and the analytical approach used (well recognised by the authors), these findings are highly relevant for the general practitioner working with deprived patients because they put the problem of social equity in access to care on the agenda.

We believe that the general practitioner can play an important role in three strategies to tackle inequalities. First, GPs are central in strategies to *increase the accessibility* of the primary healthcare system.<sup>6</sup> Accessibility is not limited to financial barriers but also includes psychosocial, administrative, and other barriers. The

question 'Do we really meet the demands of all our patients, including the deprived?' should be an important issue on the agenda of any primary healthcare service. Yet, this may lead to an internal conflict for the caregiver: a healthy mix between professional and private life is striven for at the personal level but patient needs make that flexibility of the caregiver is asked for. Further, the complexity of the (health) problems of most deprived patients requires a comprehensive interdisciplinary approach. Medical training still does not prepare students adequately for interdisciplinary cooperation, certainly in the context of approaching underserved groups.

Secondly, the GP can contribute to putting social inequalities on the political agenda by *reporting 'social evidence'* that emerges from his/her (electronic) patient records. In this context it is important to mention that with respect for the privacy of the patient, a lot of the socially relevant information that is actually stored could be explored, analysed and reported.

The final strategy in which the general practitioner can contribute is *the empowerment of the patient*. Stimulating self-reliance, restoring self-confidence and empowering patients in difficult living conditions involves important challenges in the doctor-patient communication. Often the GP has to balance between these rather long-term goals and the need for immediate action and problem-solving of emergent problems. A recent development is the increasing importance of (health) information. In our knowledge-based society an unequal use of new communication channels such as Internet may increase the gap between the information rich and the information poor. This will make the task of the general practitioner more complex and will also require a diversification of the communication strategy with patients.

In the end the fundamental solution for reducing socioeconomic inequalities in health is to *tackle poverty and to pursue equity* in income, education and social participation. Initiatives such as improving education, the creation of accessible jobs and stimulating intercultural cooperation are essential steps in reaching these aims.

Despite all the efforts made, traditional political parties have difficulties in preventing social isolation and individualism and the precarious result is the increasing success of non-democratic political parties in inner-city areas. The general practitioner and other primary

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healthcare workers are very often the one and only link left between isolated individuals and society. Primary healthcare teams may thus contribute to the restoration and development of social networks and social cohesion through a 'community-oriented primary care approach' (COPC).<sup>7</sup>

The question one may ask is to what extent primary care workers, particularly general practitioners, can keep bearing these increasing responsibilities? It is time that the fundamental political debate on primary healthcare should be focused on the following issue: investing in a higher quality accessible primary care service may be an important strategy in the prevention of undemocratic, authoritarian sociopolitical developments. Who is going to research the 'political evidence' of general practice? ■

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## Excellence in primary care research: which requirements are needed?

Michael M Kochen

Among many attempts to define general practice (which in most European countries is the equivalent of primary care), Barbara Starfield's proposal is still the most plausible and appropriate: she described primary care as first-contact, continuous, comprehensive, and coordinated care provided to populations undifferentiated by gender, disease, or organ system.<sup>1</sup> These elements are accepted by most professional organisations, agencies and commissions as concurrent attributes of the field.

Definitions are, however, not sufficient to sustain primary care, and it was merely a matter of time before general practice established itself as an academic discipline (albeit with different growth stages) in most European countries.<sup>2</sup> Despite this development and a realistic estimation on the strengths and deficits of primary care research from within the discipline<sup>3</sup> there are still some who seem to constantly call themselves and their work into question.

A recent editorial in *The Lancet*<sup>4</sup> rightly criticised the confusing discussions at a WONCA conference in Kingston, Canada on why research in family medicine might be necessary and how to distinguish it from other

areas of clinical practice. Despite this criticism ('painful introspection'), the editorial emphasised that efforts to develop primary-care research deserve strong support.

The question still remains about how best to successfully proceed. In this issue of the Journal, Jouke van der Zee and Madelon Kroneman from the Netherlands Institute of Health Services Research (Nivel) and Maastricht University and Bonaventura Bolívar from Fundació Jordi Gol i Gurina in Barcelona<sup>5</sup> identify five favourable conditions for research as part of the professional development of general practice - among them the existence of a scientific association, a peer-reviewed journal, a circumscribed population for having a population denominator for practices, a gatekeeping system and chairs and departments of general practice at universities. These conditions were then evaluated in the UK and the Netherlands (two countries with a well-established research tradition) and compared with Spain, where GP research development is still limited. The authors concluded that although most conditions for successful scientific progress in general practice (except the gap between the academia and general practice, and the lack of research organisation and support) are present in Spain, it nevertheless takes time to turn the existing focus in healthcare upside down and to 'shift the balance' to primary healthcare.

Although the authors have done their study well, it remains unclear whether it is indeed so simple to transfer

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# Oxford Textbook of Primary Medical Care

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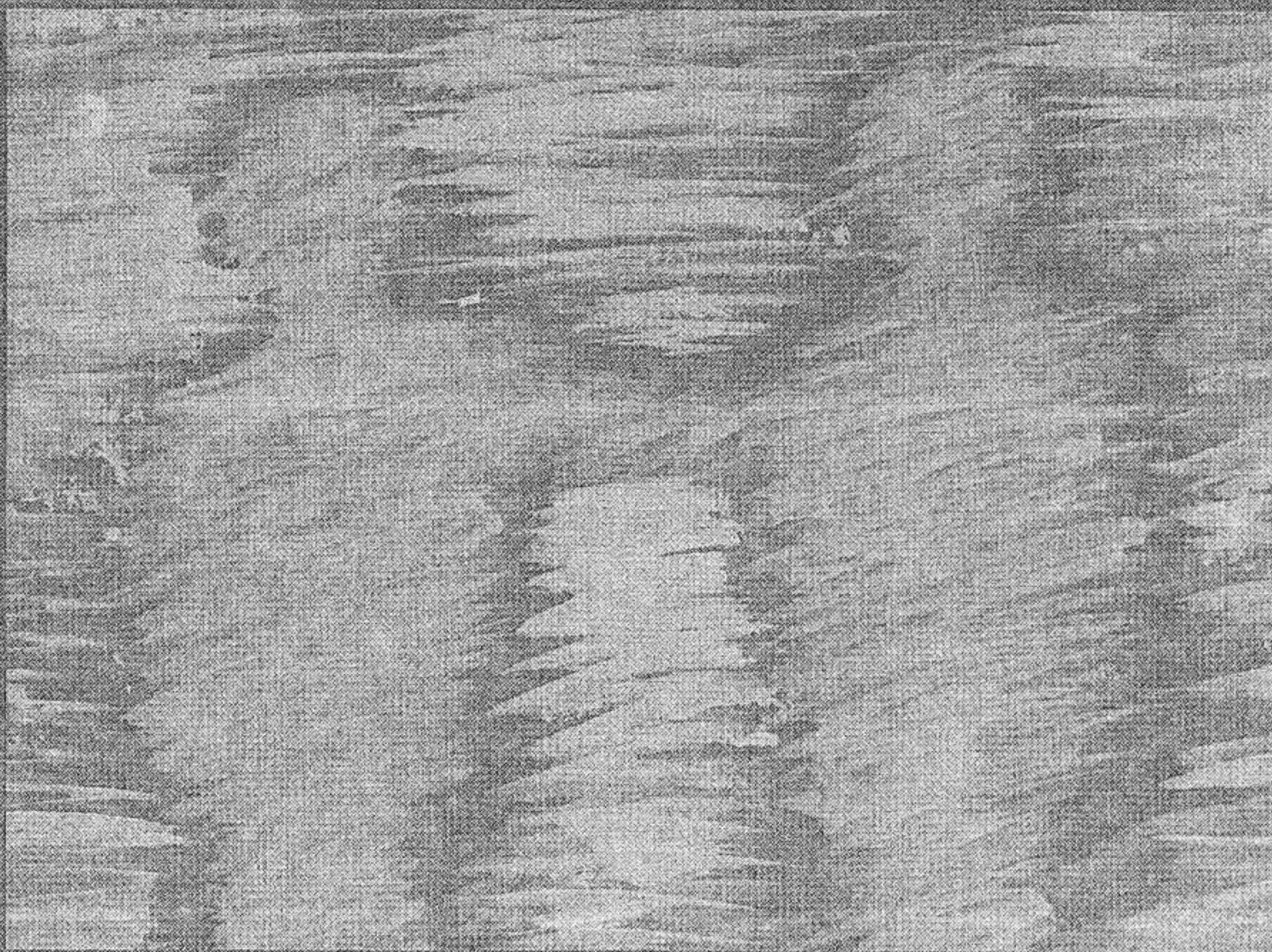
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## 4.5 Socio-economic differences in health

Sara Willems and Jan de Maeseneer

### Introduction

The discussion of socio-economic health differences starts from the concept of social stratification, which layers society into bottom, representing the less-favoured members of society, and top, representing the most favoured. The term 'socio-economical health differences' indicates the systematic differences in health between people with a lower position in the social stratification on the one hand and people with a higher position on the other hand.

This chapter includes five parts. The first part gives an overview of the historical context of research on unhealthy inequalities. In the second

part, some methodological and conceptual problems in measuring socio-economic health differences are presented. In the third part, we go deeper into the present status of health inequalities research and look at its epidemiology. Part four explores the social differences in the utilization of health care services and the way family doctors deal with poor patients in their practice. Finally, in the fifth part, we report on possibilities to tackle health inequalities and reflect on the consequences of socio-economic health differences for the organization of the health care system.

### History

A classic topic within today's public health research concerns socio-economical health differences. When in the nineteenth century in a number of European cities committed doctors and citizens established the Sanitary Movement, interest in this topic arose. This movement's goal was to tackle the major problems of public health at that time. Extensive attention was paid to different mortality and morbidity rates between the rich and the poor.<sup>(1)</sup>

One of the oldest known studies in this area concerns the mortality in Geneva in the seventeenth century. Using ecclesiastical registers the life-course of a large sample of the population of Geneva was reconstructed. The profession of the individuals also being registered, it was possible to analyse mortality by social class and to provide evidence for the existence of socio-economic health differences. Studies about other large cities in Europe, performed on data from the eighteenth century, equally show explicit discrepancies between social classes<sup>(1)</sup> (Table 1).

Equal accessibility to the health care system for all citizens being an important objective of the welfare state, some believed that the implementation of this welfare system in the 1960s and 1970s would be able to at least decrease the problem of socio-economic health differences. Though measures taken in this spirit led to a stronger increase in the use of health services by lower-income groups than the average increase for the total population, health differences did not disappear.

In 1977, the Secretary of State for Social Services of the Labour government in the United Kingdom appointed a Research Working Group to assess the national and international evidence on health inequalities and so draw conclusions for policy. The report concluded that the poorer health experience of lower occupational groups applied to all stages of life. Moreover, if mortality rates of professional workers and members of their families had been applied to partly skilled and unskilled manual workers and the members of their families during 1970–2, 74 000 lives of people aged under 75 would not have been lost.<sup>(2)</sup>

Mainly because of the publication of the Black Report in the United Kingdom, renewed attention to socio-economic health differences arose and new studies and intervention programmes were designed.<sup>(1)</sup>

The World Health Organization (WHO) put emphasis on 'equity in health' too, referring to a situation in which everyone has equal chances to reach his/her maximal potential health, rather than everyone having the same health status. In 1984, the member states of the Regional Bureau for Europe of the WHO recognized the importance of focused attention for socio-economic health differences. The first target in the 'Health for all by the year 2000' declaration states: 'By the year 2000, the differences in health status between countries and between groups within countries should be reduced by at least 25 per cent, by improving the level of health of disadvantaged nations and groups.' Hence, the monitoring of the differences in health status between different geographical areas and socio-economic groups within each country should be strengthened, priority should be given to the implementation of measures to reduce differences in health status, the basic prerequisites for health, such as food, housing, and education, should be available for all, the living and working environments supporting health and adequate health care should be more accessible and disadvantaged nations should obtain 'special assistance and attention'.<sup>(3)</sup> The newer 'Health 21' programme equally considers socio-economic health inequalities a major issue.<sup>(4)</sup>



**Table 1** Health life expectancy in a number of European cities in the seventeenth and eighteenth centuries

City	Period	Mean age at death (in years)			Ratio higher class/ lower class (in %)
		Higher class	Middle class	Lower class	
Berlin	1710–99	29.8	24.3	20.3	147
Geneva	17th century	35.9	24.7	18.3	196
Rouen	18th century	32.5	33.0	24.5	133
Trier	1770–1800	41.0	—	36.5	112
Neuruppin <sup>a</sup>	1732–1830	33.2	28.6	28.9	115
Durlach <sup>a</sup>	1751–1800	53.1	58.2	40.1	132
Spandau	1720–1869	58.5	56.5	54.0	108

<sup>a</sup> Only adults.Source: Schulz H. (1991). Social differences in mortality in the eighteenth century; an analysis of Berlin church registers. *International Review of Social History* 36, 232–329.

## Methodological and conceptual problems

As stated above, in the last decades a huge amount of research has been done concerning the differences in health between society's higher and lower socio-economic classes. Based on this literature, the relation between socio-economic status, on the one hand, and physical and mental health, on the other hand, has been established. Still, methodological and conceptual problems hamper the comparison, generalization, and interpretation of these—sometimes contradictory—findings.

## Health inequalities versus inequities

In this chapter, the term 'socio-economic health differences' is used to describe the systematic differences in health between people from different layers of the social stratification. This definition does not imply any value judgment about the fairness of these health differences. Hence, the terms 'inequalities in health' and 'inequities in health' can be used. The strict definition of 'inequalities in health' refers to a broad range of differences in both health experience and health status between countries, regions, and socio-economic groups. Most inequalities are not biologically inevitable but reflect population differences in circumstances and behaviour that are in the broadest sense socially determined. Likewise, 'health inequities' are inequalities that can be avoided and are henceforth unfair and unjust.

Despite these formal definitions, health inequalities and inequities are not understood worldwide in the same way, which complicates interpreting research results. For example, in literature from industrialized countries such as the United Kingdom, the term 'inequalities in health' is used to refer to differences in health status between regions and population subgroups that are regarded as inequitable. In reality, the term 'inequities' is mainly applied to unfair and unjust differences in access to health services between regions and population subgroups within a country.

In western European countries, in which access to health services is relatively universal and not strongly dependent on socio-economic circumstances or geography, much of the research on inequalities in health has been focused on the mechanisms that generate socio-economic gradients in illness, health, and mortality. From this perspective, inequalities in health are mainly a function of the aetiology of disease, and the policy solutions that arise concern primary prevention. In low- and middle-income countries, by contrast, people working on inequities in health tend to see the problem as one of trying to ensure more equitable provision of health care.<sup>(5)</sup>

## Measuring inequalities and socio-economic status

Individual or household income, educational level, and occupational social class are the main principles to define one's socio-economic status. In some research, however, proxy variables such as being the owner of a house, possessing a car, etc. are used.<sup>(6)</sup> Since there is no universal consensus about how to measure these variables, making valid comparisons of health inequalities between socio-economic groups becomes more problematic.

Despite these difficulties, research has nevertheless established real international variations in the magnitude of socio-economic differences in health status and mortality for specific diseases. Thus, it is clear that socio-economic variation is not a fixed and inevitable feature of society.<sup>(7)</sup> Further, since lower-income countries do not always have disposal of the necessary infrastructure to collect relevant data, comparison between countries also turns out to be difficult. Even in the higher-income countries the available data often do not allow the measurement of the distribution of health status within the country.<sup>(5)</sup>

Finally, difficulties in the measurement of inequalities in health are compounded by yet another problem. The less-favoured groups are not always represented in clinical research (e.g. RCTs). Moreover, when they are included in the research population, it still remains unclear in which way the results can be applied to these population groups.

## Explanatory models: selection or causation?

The relation between health and socio-economic status has been documented above. Different hypotheses exist about the causality in this relationship and about the explanatory mechanisms. In this section, we give a short overview of the most common frames of reference.

The artefact hypothesis states that the observed differences in health between the socio-economic classes are explained by artefacts in the research. An example of this is the nominator/denominator bias that arises when different sources provide data for the nominator on the one hand and for the denominator on the other. Because of different definitions used by the two sources, the nominator and the denominator are measured in a different way and the result can be biased. For example, when comparing the healthy life expectancy in two countries, based on the national health surveys, the definition used to determine the healthy life expectancy in the one country can vary from the definition used in the other. Still, the amount of evidence for socio-economic health differences delivered by studies with a high methodological quality, avoiding this artefact bias, is growing. Nevertheless, one should heed this hypothesis' warning and be careful in interpreting research results.<sup>(1)</sup>

The social selection theory asserts that one's health status strongly determines one's life chances, which implies that health 'selects' people into different strata. In this theory, social mobility (moving within the social strata) is an expression of selection through health. The hypothesis of genetic predisposition stands close to the social selection hypothesis by stating that one's place in the social stratification is determined by one's genetic predisposition. Some evidence has been published to confirm these theories, though all socio-economic health differences cannot be explained.<sup>(1)</sup>

According to the social causation theory, one's socio-economic status determines one's health through intermediate factors. Socio-economic health differences occur when the quality of these intermediate factors are unevenly distributed between the different socio-economic classes. Four groups of intermediate factors can be identified. The group of behavioural



factors and lifestyle include eating habits, smoking, risk behaviour, the use of health services, etc. Housing and working conditions, individual income are structural factors.

Psychological factors include stressors (e.g. life events), coping-style, psycho-social stress, social network, etc. Finally, the group of intermediate factors are related to the early years of life such as the living conditions in childhood, health status as a child, etc.<sup>(1,8,9)</sup> Though many determinants are identified, the relative impact of these determinants on health and the joint impact of determinants on health remain unclear.

In this context we refer to the work done by Wilkinson on the impact of relative versus absolute material standards. In most explanatory models for socio-economic differences in health, the direct impact of absolute material standards such as bad housing, poor diets, inadequate heating, ... is implicated, though material conditions do not adequately explain health inequalities in western countries. In richer countries, wellbeing is more closely related to relative income than to absolute income. A low relative material standard affects health through the psychosocial effects of its emotional and social meaning. Social dominance, inequality, autonomy and the quality of social relations have an important impact on psychosocial wellbeing and are among the most powerful explanations for the patterns of population health in rich countries. The distinction between the direct effects of material conditions such as malnutrition and bad housing on health and the psychosocially mediated health effects of relative deprivation has important implications for policy.<sup>(10,11)</sup>

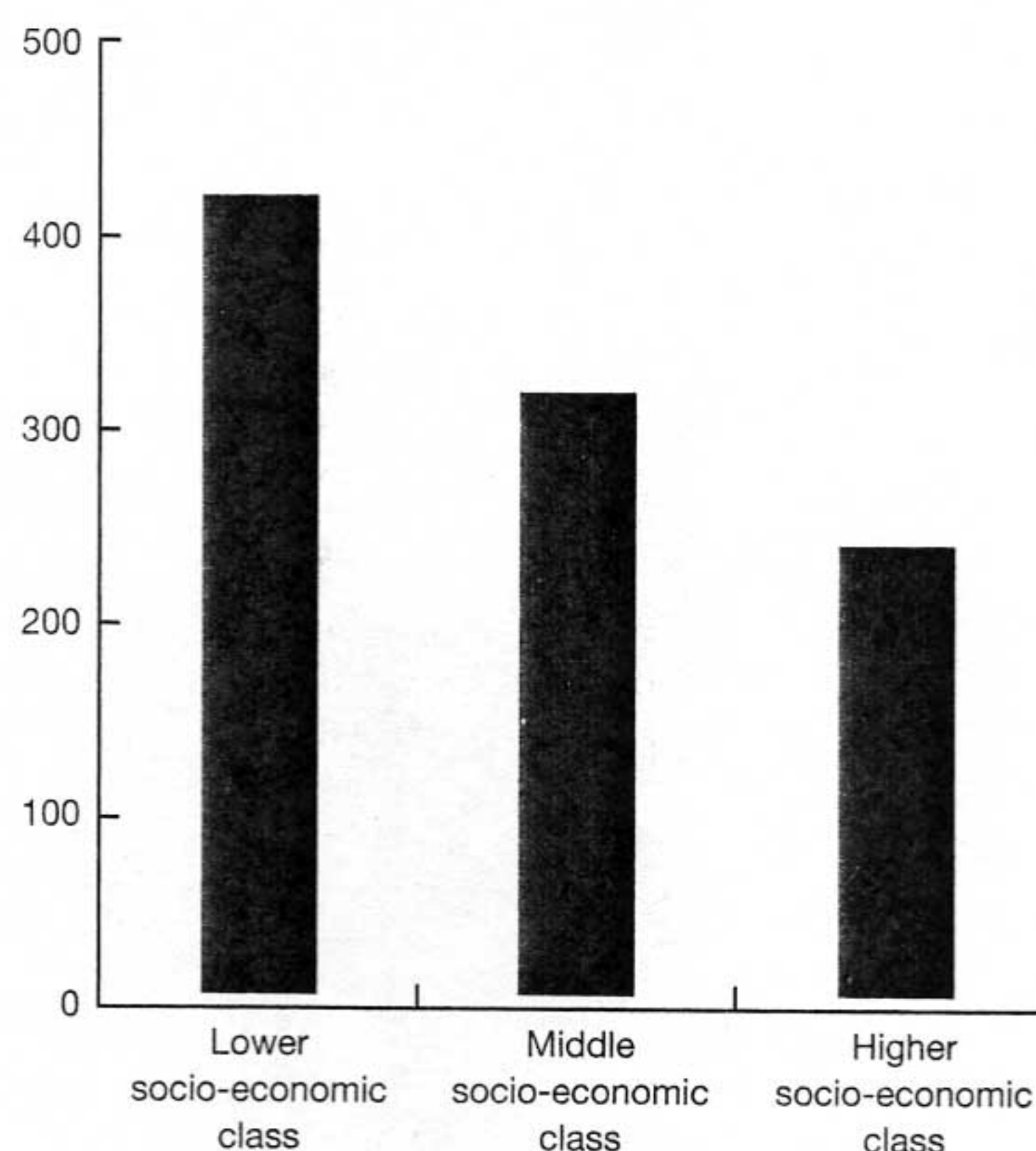
## Epidemiology

### Socio-economic inequalities in health

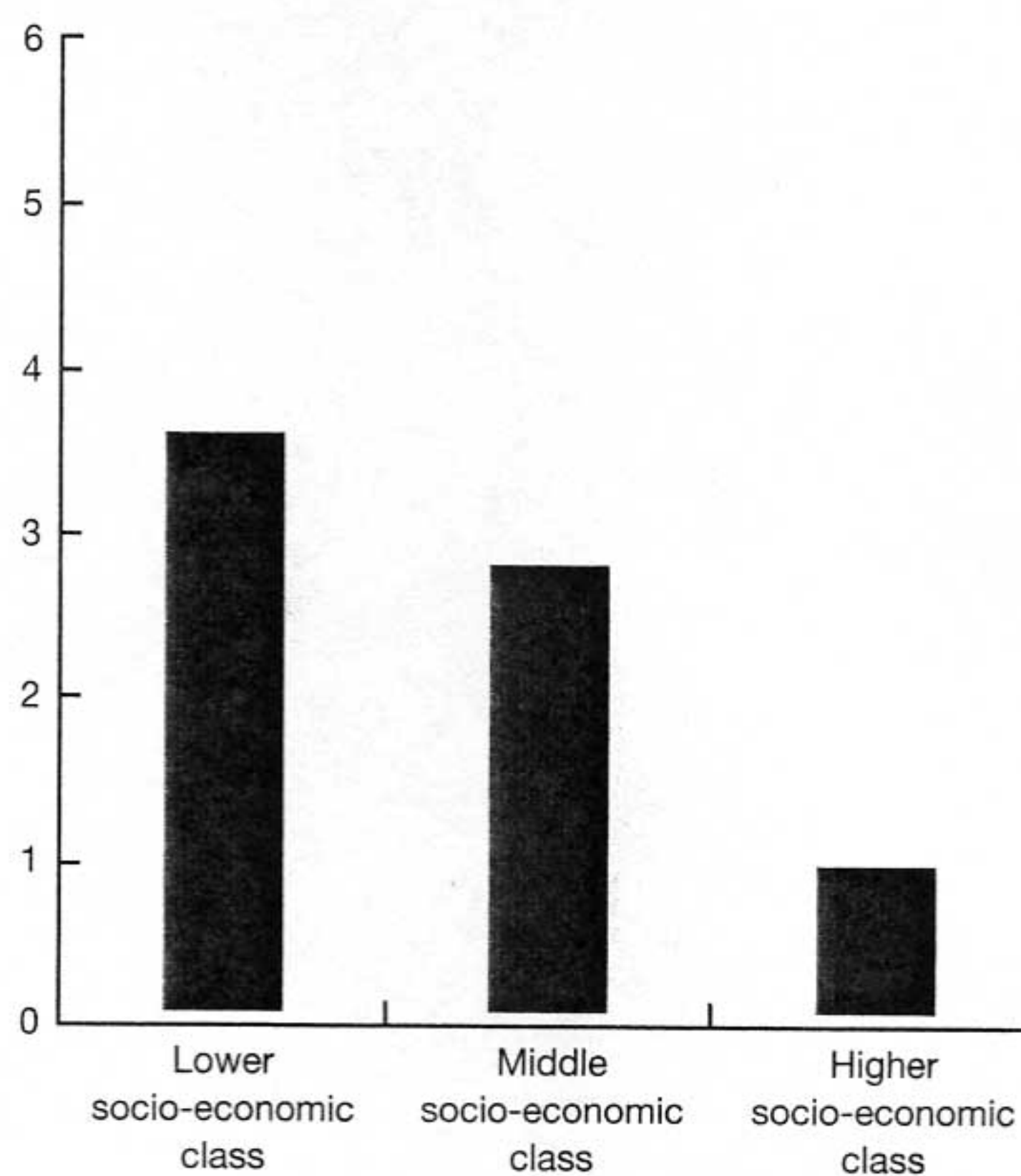
Notwithstanding increased attention paid to socio-economic health inequalities and the measures taken by governments, mortality and morbidity inequalities between lower and higher socio-economic classes can still be observed nowadays, even in western, industrialized countries. Despite marked health improvements of the overall population, literature shows higher mortality rates for most diseases and for major causes of death for the socio-economically disadvantaged.<sup>(12,13)</sup> Scientific evidence indicates that less-educated people are more likely to be affected by disabling back pain than educated people.<sup>(14)</sup>

High-income inequality in a country also confers an increased risk of poor mental health,<sup>(15)</sup> coronary heart disease,<sup>(16,17)</sup> and smoking-related cancers.<sup>(15)</sup> In the study of Power et al., the prevalence of subjects who reported poor health increased with declining social class at age 33: from 8.5 per cent in classes I and II to 17.7 per cent in classes IV and V among men, and from 9.4 per cent to 18.8 per cent among women.<sup>(18)</sup> An analysis of the registered morbidity in three representative primary care practices in the Netherlands during the period 1971–88 concludes that between the three defined social classes (lower social class, middle class, and higher class, based on profession) large differences can be noted. In the lower social class, more new cases of morbidity per year are registered than in the higher class (Fig. 1). When looking at the seriousness of the disease, the same pattern can be found. For example, hypertension is diagnosed three times more often in the lower social class than in the higher social class (Fig. 2).<sup>(19)</sup>

This inequality exists for both males and females at every stage of the life-course.<sup>(11,20)</sup> Already in the early stages of life inequalities in health appear. So, literature reports that the hospitalization rate for inner-city infants is much greater than that for suburban infants in the United States. A substantial portion of the difference, namely that attributable to mandatory admissions, reflects higher rates of serious illness. Dissimilarities attributable to discretionary admissions may reflect higher rates of serious illness to some extent, but also appear to reflect less-effective health services to a substantial degree.<sup>(21)</sup> When looking at inequalities after the age of retirement, relative differences in mortality between low and high employment grades are less than before retirement, partly because the background incidence for all subgroups extends with age. The absolute differences in mortality between less- and more-advantaged groups, however, increase at older ages.<sup>(22)</sup>



**Fig. 1** New cases of morbidity per 1000 patients per year, per social class (1971–1988). Source: van de Lisdonk, E.H. et al. (ed.). *Diseases in the Family Medicine Practice*. Utrecht: Wetenschappelijke uitgeverij Bunge, 1990.



**Fig. 2** New cases of hypertension per 1000 patients per year, per social class (1971–1988). Source: van de Lisdonk, E.H. et al. (ed.). *Diseases in the Family Medicine Practice*. Utrecht: Wetenschappelijke uitgeverij Bunge, 1990.

In relation to health inequalities, the high concentration of smoking among more-disadvantaged social groups is reflected in the distribution of smoking-related deaths in the early 1980s. It is shown that a man with an unskilled manual occupation (e.g. cleaners, unskilled labourers) is more than four times as likely to die of lung cancer than a person with a professional occupation (e.g. doctors, accountants, lawyers) and twice as likely to die from coronary heart disease.<sup>(23)</sup>

There is also growing evidence that mortality inequalities have widened in western countries over time. These increasing disparities appear to be due to faster declines in mortality among those of higher socio-economic status. In some countries, on the other hand, there is evidence of an actual increase in mortality rates for some conditions among the most disadvantaged.<sup>(20,24–26)</sup> For example, in Scotland relative deprivation increased



between the 1981 and 1991 censuses and was mirrored by a worsening of relative death rates. Changes in relative mortality were explained by differences in the decline in death rates according to the affluence of an area; among men the decline in deprived areas was only about half that in affluent areas and among women it was only about one-third.<sup>(25)</sup>

Further, literature substantiates an unprecedented widening of income differences during the 1980s and a growth of relative poverty in Britain, as in several other developed countries. Official figures of incomes after taxes and benefits, adjusted for household size, show that at the start of the decade the incomes of the richest 20 per cent of the population were four times as large as those of the poorest 20 per cent. By 1991, they were almost six times as large. Moreover, in the late 1980s not only was the most rapid part of this unprecedented widening of income differences seen, but also a cessation in the long-term fall in national mortality rates among men and women aged 15–44.<sup>(27)</sup>

An important set of studies looking at changes in social inequalities over time are the Whitehall studies. The Whitehall I study of British civil servants started in 1967, and showed a steep inverse association between social classes, as assessed by grade of employment, and mortality from a wide range of diseases. Between 1985 and 1988, the Whitehall II study analysed the degree and causes of the social gradient in morbidity in a new cohort of 10 314 civil servants (6900 men, 3414 women) aged 35–55. In the 20 years separating the two studies there was no decrease in social class difference in morbidity: an inverse association between employment grade and prevalence of angina, electrocardiographic evidence of ischaemia, and symptoms of chronic bronchitis was found. Self-perceived health status and symptoms were worse for people with lower-status jobs. There were clear employment-grade differences in health-risk behaviours, including smoking, diet, and exercise, in economic circumstances, in possible effects of early-life environment as reflected by height, in social circumstances at work (e.g. monotonous work characterized by low job control and low satisfaction), and in social supports.<sup>(28,29)</sup>

The WHO Health Report 2000 indicates that health differences occur between people from different socio-economic classes within the same country as well as between countries. When looking at life expectancy at birth (in years) large differences can be noted, differing from 74.7 years for males and 79.7 years for females in the United Kingdom to 33.2 years for males and 35.4 years for females in Sierra Leone. Differences in the average level of population health are even larger. This is reported in terms of disability-adjusted life expectancy (DALE) at birth, most easily understood as the expectation of life lived in full health, and differs between countries from 69.7 years for males and 73.7 years for females in the United Kingdom to 25.8 years for males and 26.0 years for females in Sierra Leone (Table 2).

Concerning Europe, the inequalities in life expectancy are increasing. In 1970, male life expectancy at age 15 was 56 years in countries that now form the European Union, 55 in the communist countries of central and eastern Europe (excluding the Soviet Union), and 52 in the Soviet Union. In 1997, male life expectancy increased to 60 in the countries that now form the European Union and decreased to 54 in the former communist countries of central and eastern Europe (excluding the former Soviet Union), and to 48 in

Russia. The relative disadvantage for women was similar, though the absolute differences were smaller. Mortality changes after 1989 in eastern Europe were correlated with changes in gross domestic products and alterations in income inequalities. There was a life expectancy gap of 6 years between eastern and western Europe in the mid-1990s. Of these 6 years, 0.9 years were due to differences in infant mortality. The biggest contribution to the gap was in middle age. Cardiovascular disease accounted for more than half of the 6-year gap, and external causes of death accounted for another fifth.<sup>(20,30)</sup>

### Socio-economic differences in the use of primary health care services

Differences in health care utilization by socio-economic status and gender have been reported by a number of researchers. Most studies conclude that people with low socio-economic status make more use of health care facilities, especially primary care consultations, than people with higher socio-economic status.<sup>(31–33)</sup> For this more frequent use of primary health care, a variety of reasons are mentioned.

First of all there is an association between socio-economic status and health locus of control. This term refers to the way people perceive the events related to their health as controllable (internal control), as a coincidence (coincidence oriented) or as controlled by others (mostly by doctors) (external control). The extent of being external control oriented is related to lower socio-economic status. It has been reported that doctor-oriented patients tend to visit the doctor more often. Further, financial aspects could also be significant: people with a lower income might prefer going to their primary practices rather than paying the more expensive specialist a visit.

Finally, and apparently the most important reason, people from a lower socio-economic class tend to be in a worse health condition than people from a higher socio-economic class. This implicates that the former need more health care. However, if the analyses of the health care utilization are controlled for the higher morbidity in lower socio-economic groups, these people consume less health care than people from higher socio-economic groups.<sup>(33–35)</sup>

As a result, the question whether the health care system is available and accessible for all is raised. The availability of good medical care tends to vary inversely with the need for it. This inverse care law operates more completely where medical care is most exposed to market forces, and less so where such exposure is reduced.<sup>(36)</sup>

Concerning the accessibility of the available health care, various types of barriers have been identified: geographical, financial, cultural, psycho-social barriers, the behaviour of the physicians, administrative barriers, and health care system related barriers (see Chapter 3.1).

In the following section we look closer at this latter possible barrier.

### How do family doctors deal with poverty?

According to the theoretical framework of Fishbein and Azjen (theory of reasoned action), behaviour is determined by cognition, attitude, and

**Table 2** Life expectancy at birth (in years) and disability-adjusted life expectancy (DALE) (in years) for males and females

Country	Males				Females			
	Life expectancy at birth	Uncertainty interval	DALE at birth	Uncertainty interval	Life expectancy at birth	Uncertainty interval	DALE at birth	Uncertainty interval
United Kingdom	74.7	74.4–75.0	69.7	69.4–70.1	79.7	79.4–80.0	73.7	73.5–74.4
USA	73.8	73.0–74.6	67.5	67.0–68.1	79.7	79.4–80.0	72.6	72.2–73.3
Peru	65.6	64.6–66.6	58.0	56.9–59.0	74.1	73.1–75.0	60.8	59.6–62.0
South Africa	47.3	45.4–49.0	38.6	37.7–39.5	49.7	47.7–51.8	41.0	39.9–42.1
Sierra Leone	33.2	30.7–35.2	25.8	24.5–26.8	35.4	33.0–37.5	26.0	24.8–27.1

Source: WHO Health Report 2000, 206 pp. Available from URL: <http://www.who.int/whr/2000/en/report.htm>.



intentions. Following this theory, the way family physicians deal with poor patients in their everyday practice is determined by the information and the perception they hold of the poor and of poverty, by their attitude towards poverty and poor people, and by their intentions to be responsive to these problems. Research findings on this topic have shown that among others a major barrier to health care for the homeless are indeed the family physicians themselves, more specifically their training, their perceptions of homeless people, and their consultation style. Investigation also suggests that the beliefs and attitudes of GPs concerning the issue of homelessness can lead to a medical- or a social-oriented behaviour. The choice of the GP to adopt a purely medical approach to the patient's problem may form a barrier to primary care for homeless people.<sup>(37)</sup> A qualitative, unpublished study concluded that the participating family physicians, all involved in primary health care for the poor and the underserved, identify three concepts in their definition of poverty: socio-economic aspects, psychological and personality characteristics, and socio-cultural concepts. Family physicians adopt different types of approaches to deal with deprived patients: adaptation of the doctor-patient communication, lowering of the financial threshold, referral to specialists and other health care professionals. These results illustrate the importance of the function of an accessible family physician operating at the crossroad between society and the health care system. They point out the need for specific attention towards the poor and underserved, as well as the need for adequate training and health care organization in order to meet these objectives.<sup>(37)</sup>

## Tackling inequalities in health

Reviews of evaluated interventions tackling inequalities in health reveal four main policy levels for action: strengthening individuals, strengthening communities, improving access to essential facilities and services, and encouraging macro-economic and cultural change.<sup>(22)</sup>

At the first level, policy responses are aimed at strengthening individuals in disadvantaged circumstances and employing person-based strategies. These policies are based on the premise that building up knowledge, motivation, and/or competence of skills, enables one to alter behaviour in relation to personal risk-factors, or to cope better with the stress imposed by external health hazards from other layers of influence. This approach is referred to as the 'empowerment' model of health promotion. Although these policies may be expected to have a direct impact on health (e.g. being successful in reducing smoking rates among people in poor socio-economic circumstances), very often the potential effect will be more indirect (e.g. health services for people who are unemployed do not reduce the unemployment rate, but may ameliorate the worst health effects of unemployment and prevent further damage).

The second policy level concerns strengthening communities. Here, the model of community oriented primary care (COPC model) may contribute to reduce unhealthy social inequalities (see Chapter 1.4). The focus of COPC is not only on the curative and the preventive efforts at the level of the individual patient, but also enhances a 'community diagnosis'. This approach starts from a primary health care facility, is targeted at a well-defined population, and develops a systematic intervention towards the most important health problems of the population. The COPC model comprises four steps: definition of the target population, detection of the most important health problems, development of intervention programmes, and evaluation and monitoring. Different information sources are used: experiences of the own practice (as family physician, nurse, social worker, etc.) and secondary analyses of health-related data (about unemployment, migration, vulnerable groups in society, etc.). In some cases new data are collected, both quantitatively and qualitatively (e.g. focus groups). All this information contributes to the 'community diagnosis' in which the relation between social class and health condition is an important focus. Intervention programmes are defined starting from clear objectives, realistic timing, adequate methods and, most important of all, participation of the target group during the whole process.<sup>(38)</sup> In a community health centre in a deprived area of Ghent (Belgium), for example, family physicians and

nurses observed young children in a poor physical condition. They suspected that the children spent too much time in front of the television. This was the starting point of a COPC action. A survey in the neighbourhood revealed that on average the children in that community took two times less physical exercise during a week than an average child in the country, and that they spent twice as long in front of the television. In a discussion with the children and their parents and teachers, it became clear that the lack of safe playgrounds in the neighbourhood was a major problem. Action was undertaken in order to improve possibilities for physical activities and different playgrounds were created and activities (with a high participation rate) were organized during the holidays. Since the police reported a decrease in minor street crime during that period, it can be concluded that this intervention had a positive effect, not only on the physical level, but also on the psycho-social level.<sup>(39)</sup>

The COPC approach recognizes the importance of social cohesion, as well as the need to create the conditions in deprived neighbourhoods for community dynamics to work.<sup>(38)</sup>

The third policy level focuses on improving access to essential facilities and services. These policies tackle the physical and psycho-social conditions in which people live and work, including clean water, sanitation, adequate housing, safe and fulfilling employment, safe and nutritious food supplies, essential health care, education services, and welfare in times of need. Most such improvements require multisectoral action. Within the health care system, specific actions in order to decrease psycho-social and financial barriers can be undertaken. For example, family physicians should be accessible without financial cost to the patient. Hindering the accessibility of the most cost-effective level of the health care system obviously lacks all logic. Taking all financing systems into account, capitation and salary-system theoretically guarantee financial accessibility of health care for the poor and the underserved.

Physicians have a special responsibility for the use of financial resources for health care: a cost-effective, evidence-based approach will enable the largest part of the population to have access to high quality of care.<sup>(40)</sup>

The fourth and final policy level is aimed at encouraging macro-economic or cultural changes to reduce poverty and the wider adverse effects of inequality on society. These include macro-economic and labour market policies, the encouragement of cultural values promoting equal opportunities, and environmental hazards control on a national and international scale. These policies tend to span several factors and work across the population as a whole.<sup>(23)</sup> Some policies, however, are not primarily introduced for health reasons, let alone with the aim of reducing inequalities in health. In this way they are not monitored for health outcomes. Family physicians, operating at the crossroads between society and the health care system, have a privileged position to discover and document unhealthy inequalities and to signal health consequences of bad social circumstances. Some family physicians will even consider it their duty to put social inequalities on the political agenda. The personal views of the doctor and the political context will determine which responsibility the family physician assumes. Eventually, it is clear that social health inequality is a socio-political problem. Fighting poverty on a worldwide scale will be most effective.

## Key points

Health inequalities can be tackled by four approaches

- ◆ Helping individuals change their behaviour to cope better with health risks
- ◆ Helping communities to take effective social action
- ◆ Improving access to essential facilities and services
- ◆ Encouraging macro-economic and cultural change to reduce poverty



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